

FIG. 1

2807.2.4.10

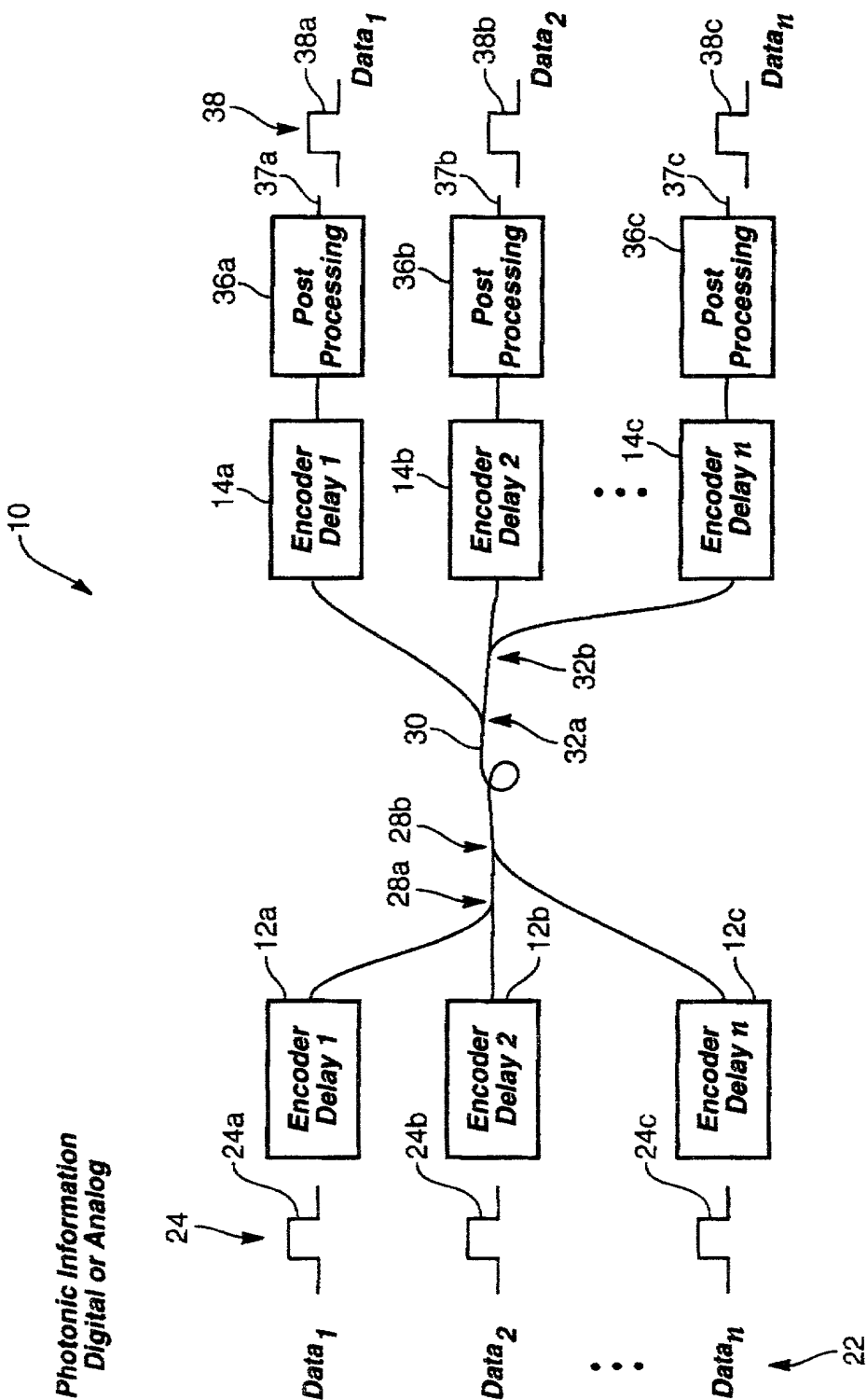
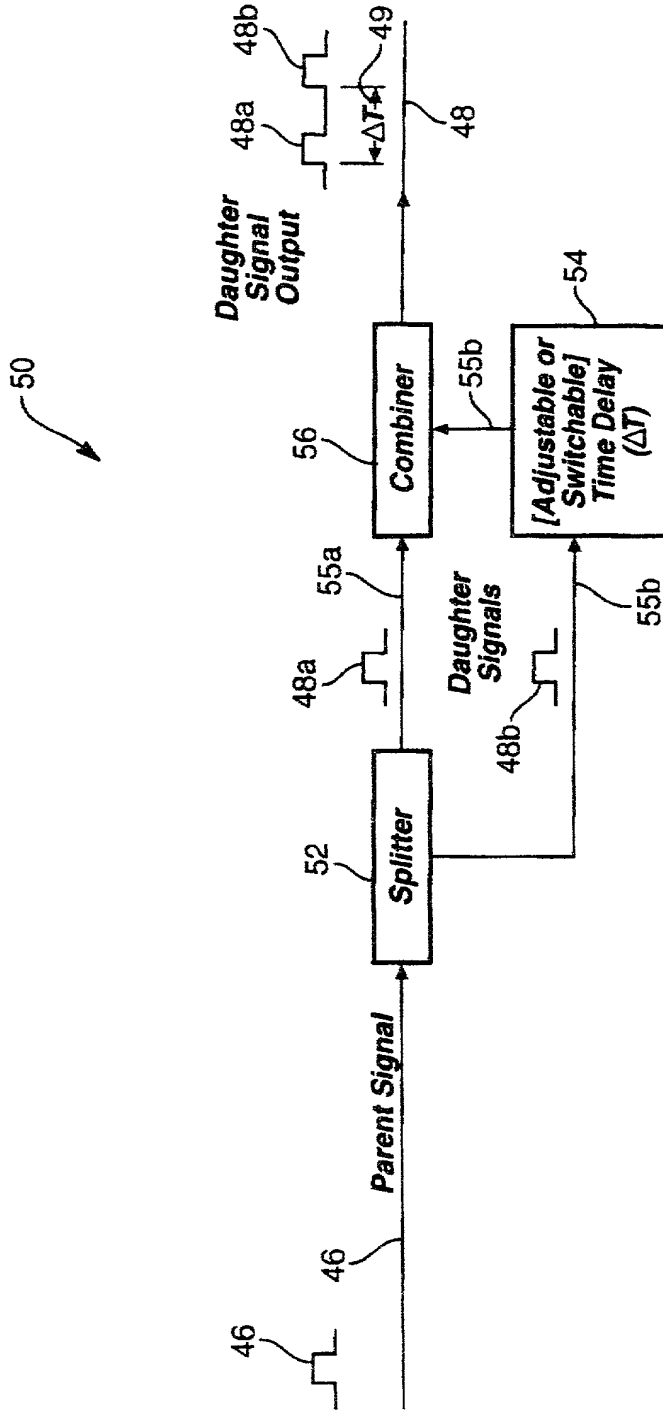
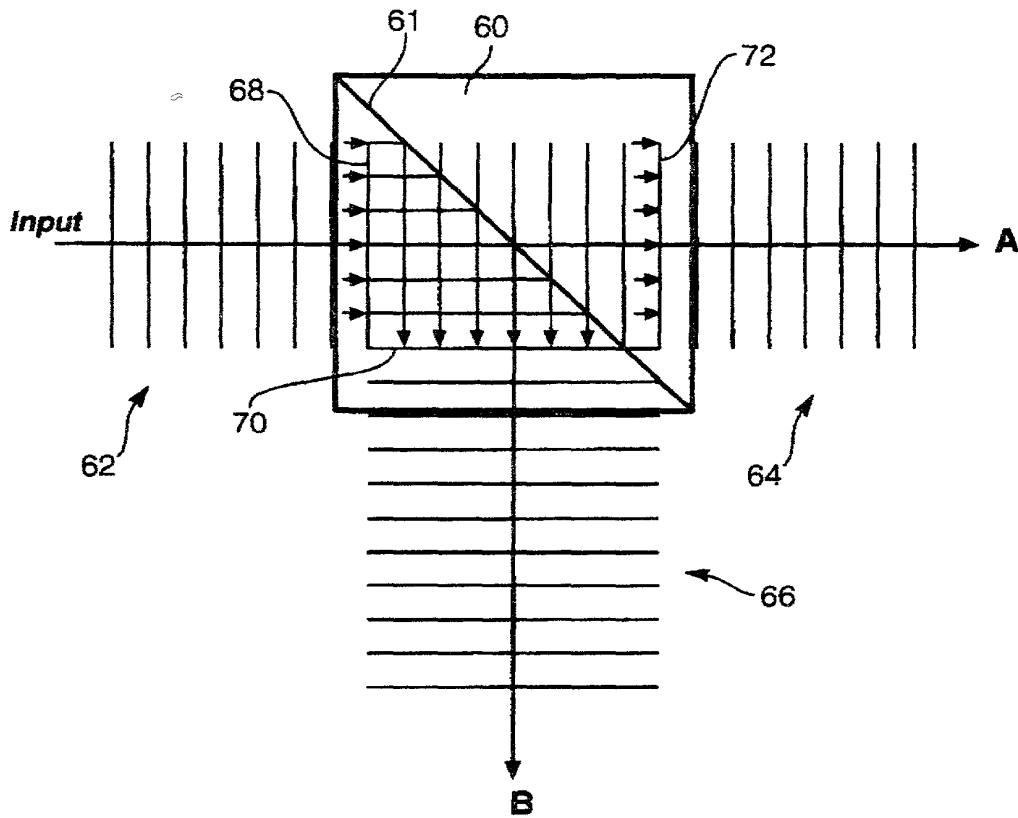


Fig. 2
2807.2.4.10



Differential Delay Multiplexer (DDM) Sender/Encoder

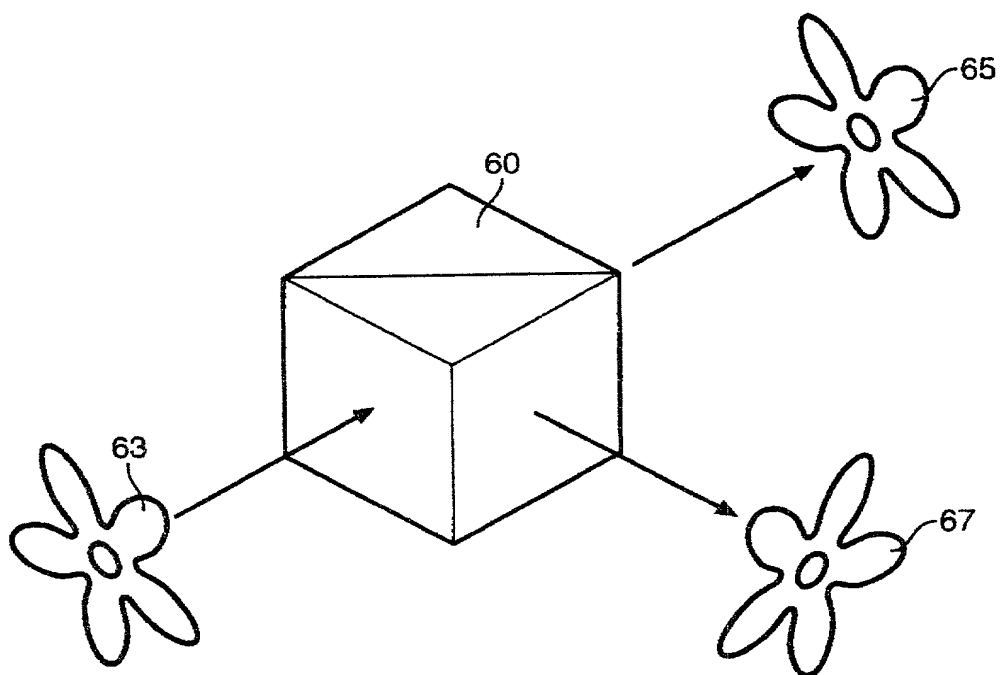
Fig. 4
2807.2.4.



Amplitude or Polarization Splitter

FIG. 7

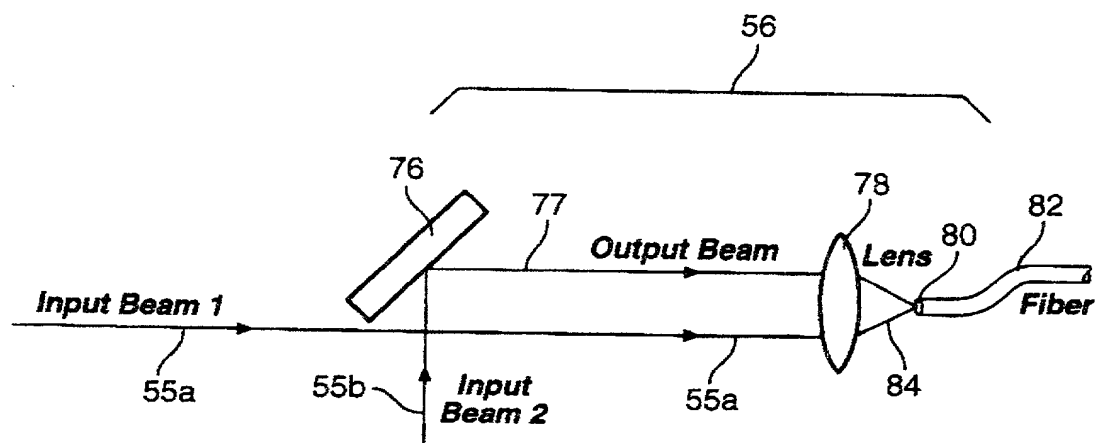
2807.2.4.



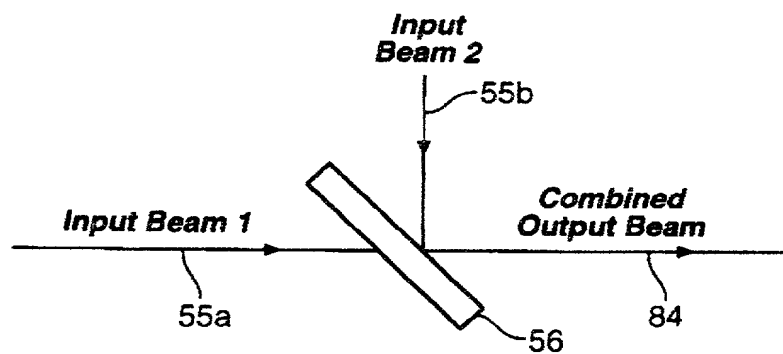
**Image Signals Which
Maintain Spatial Information**

FIG. 7A

2807.2.4.



Beam Combiner
FIG. 8



Amplitude or Polarization Combiner

FIG. 9

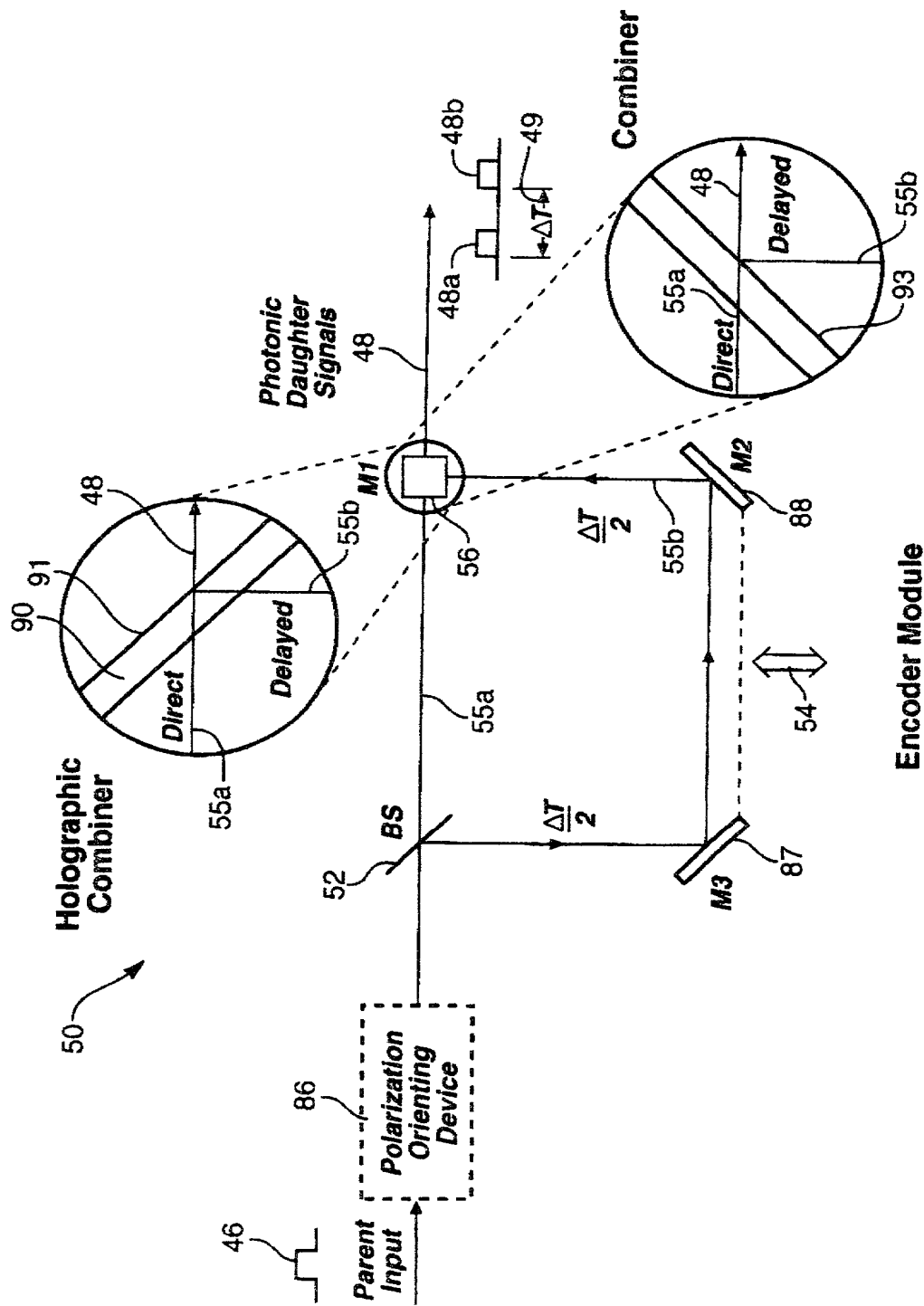
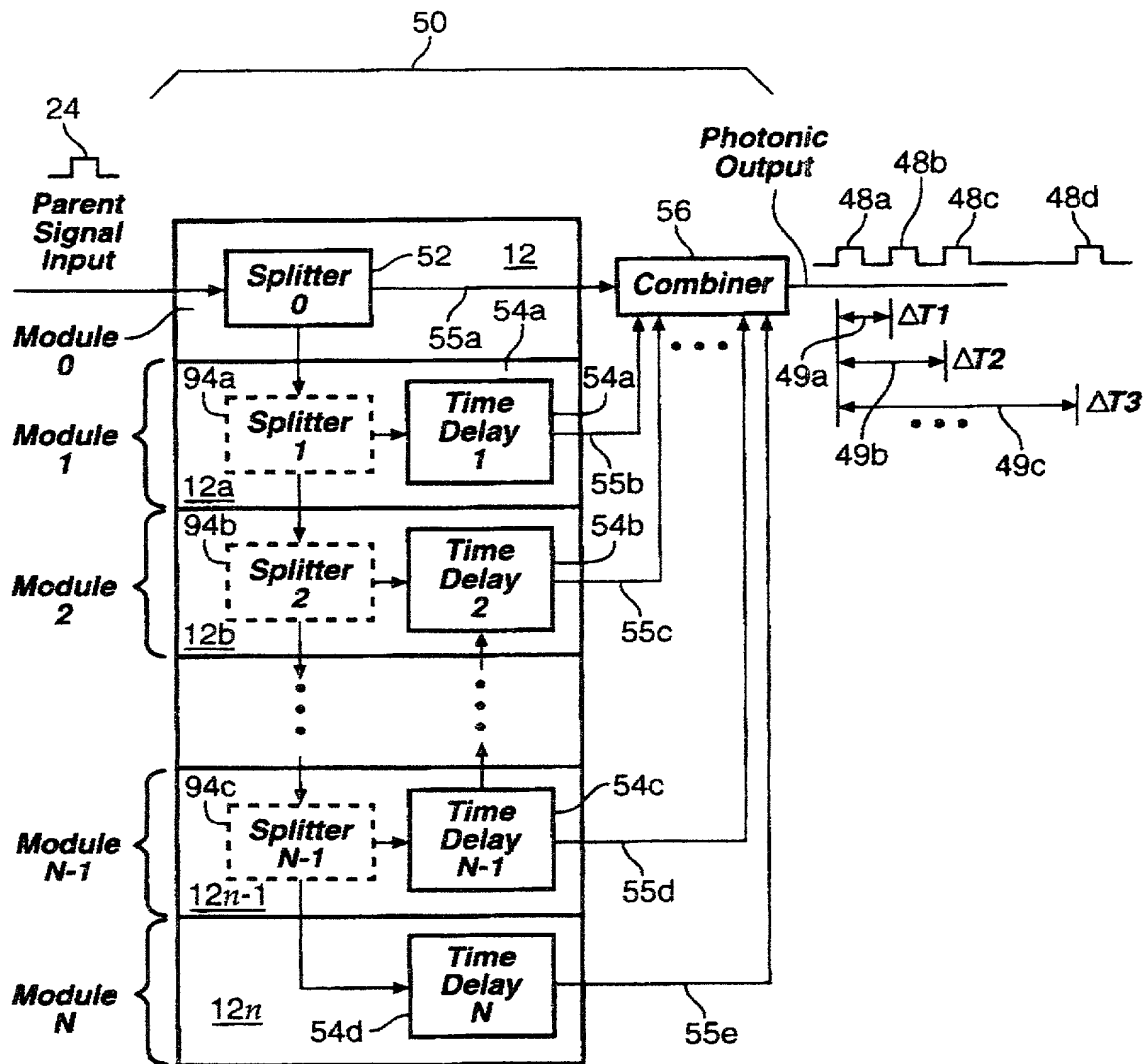


Fig. 10
2807.2.4.



Composite Encoder
Module Assembly

FIG. 11

2807.2.4.



Fig. 12

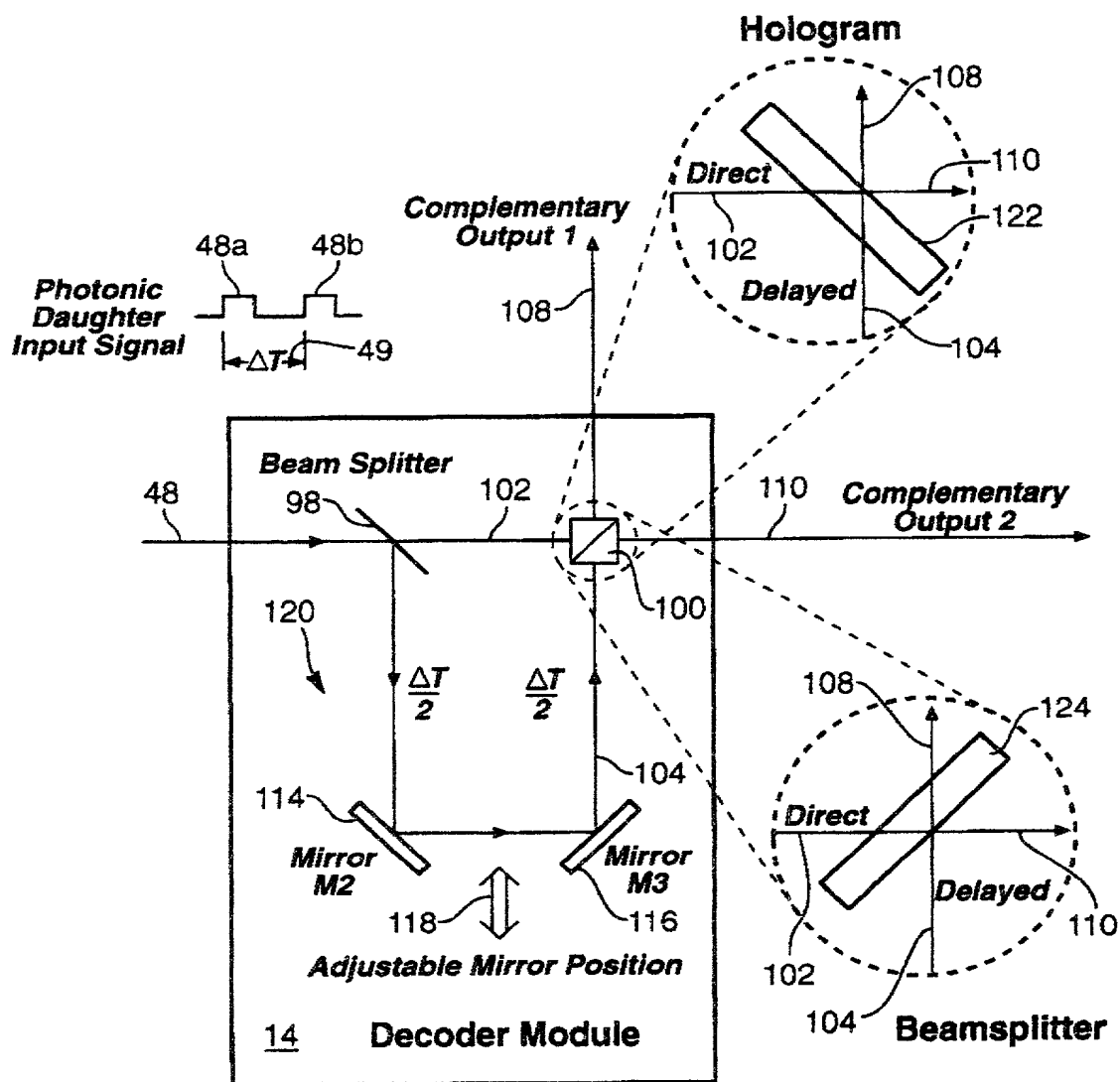


FIG. 13

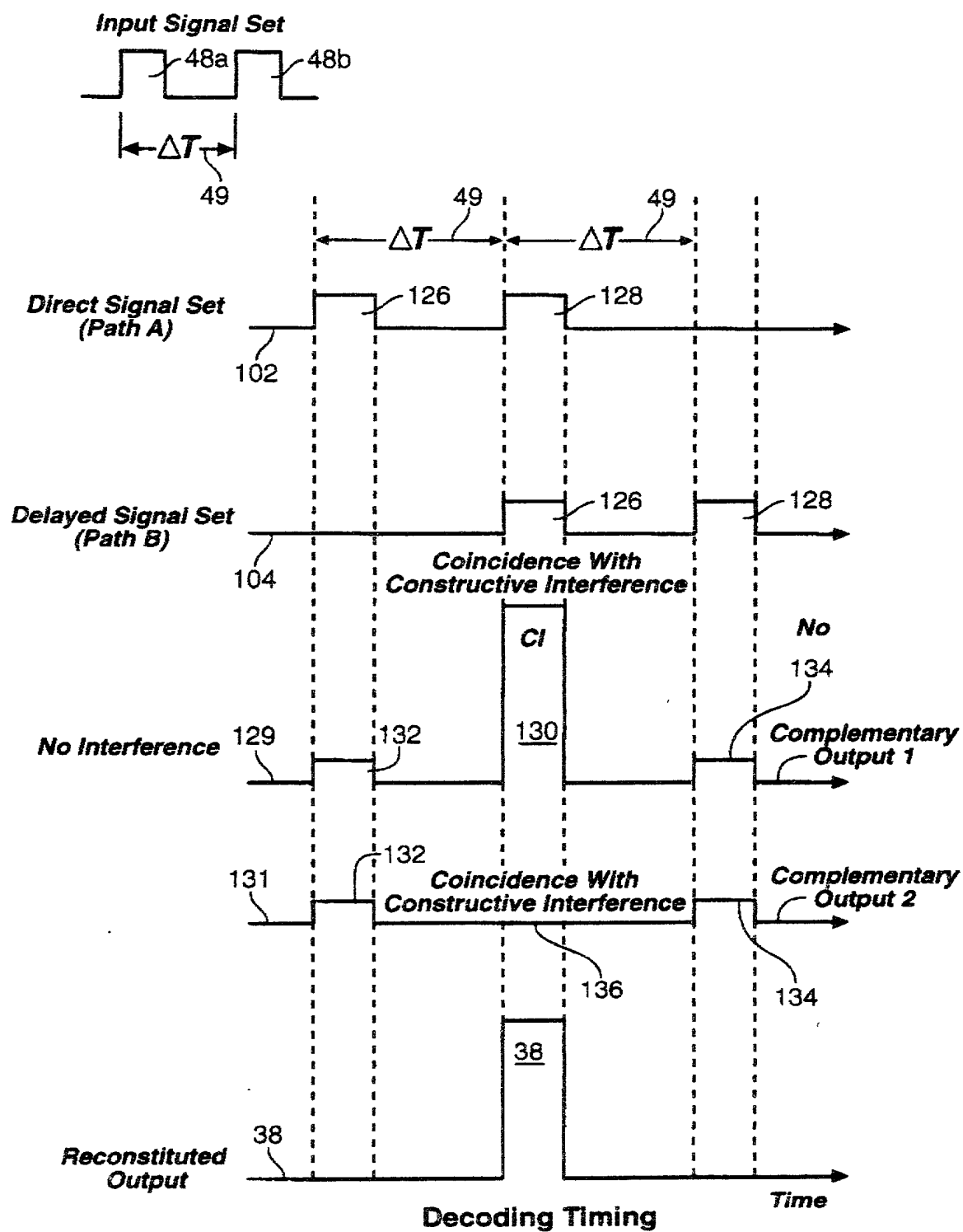
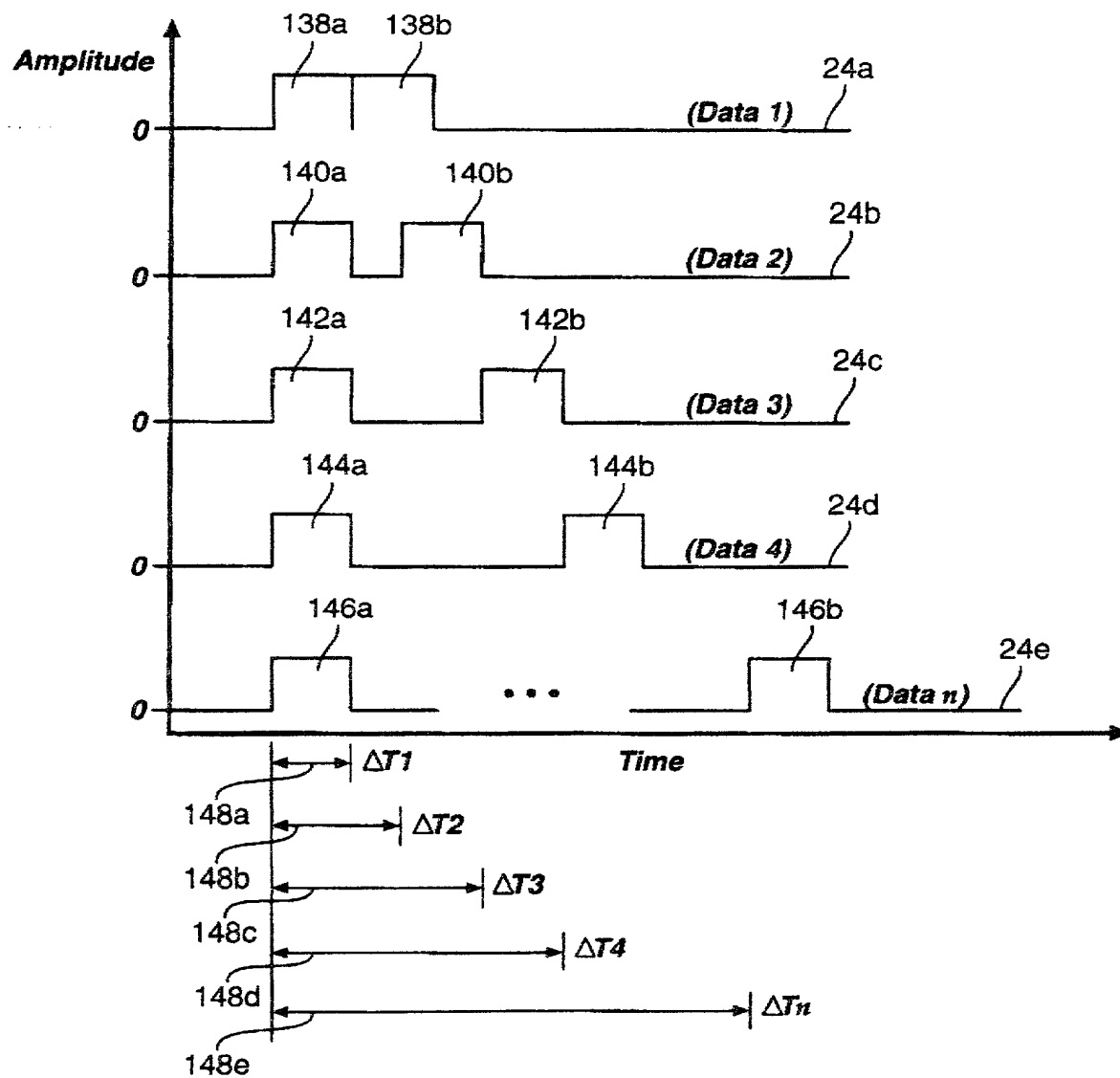


FIG. 14

**Fig. 15**

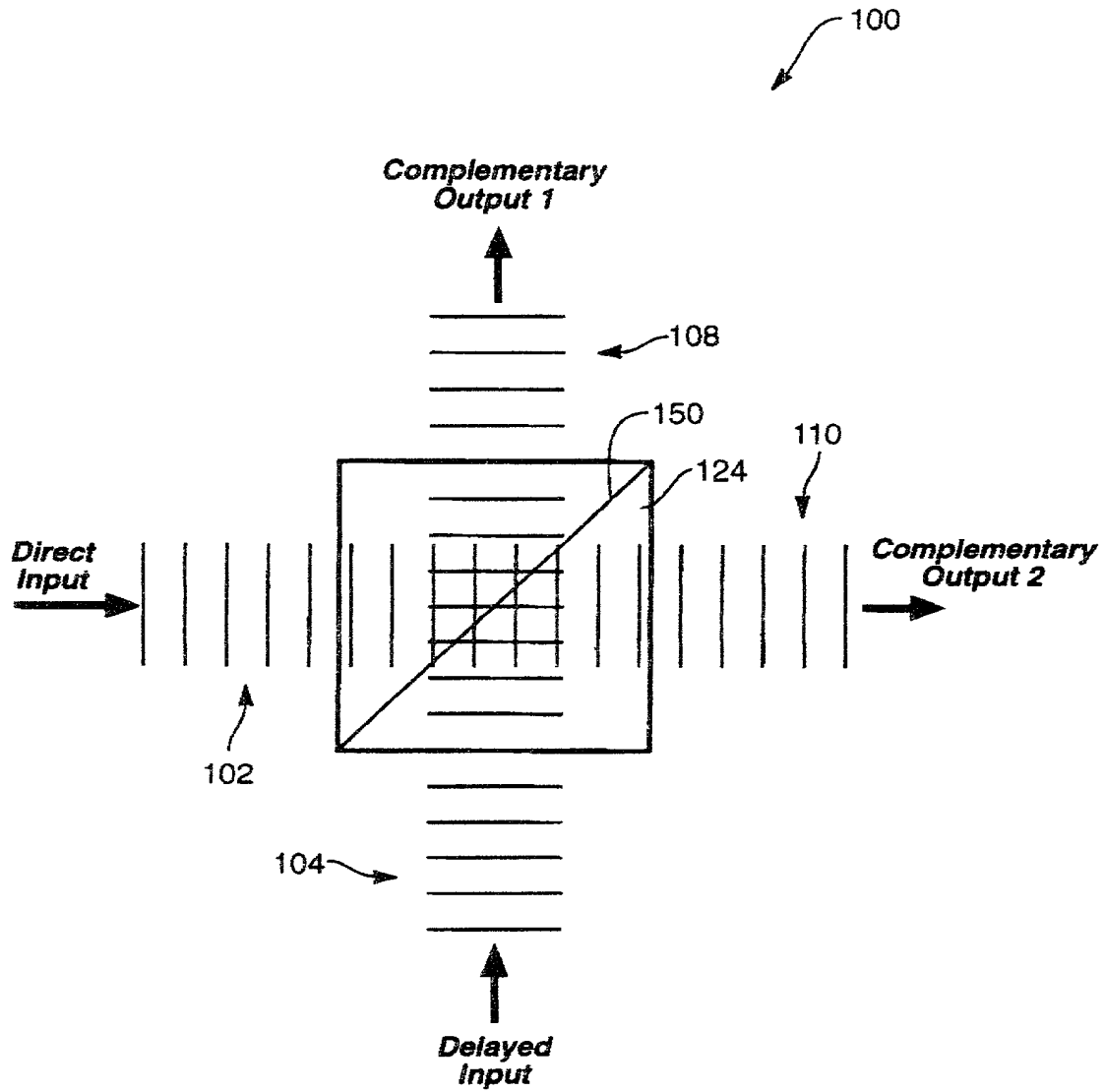


Fig. 16

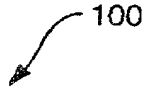


Fig. 17

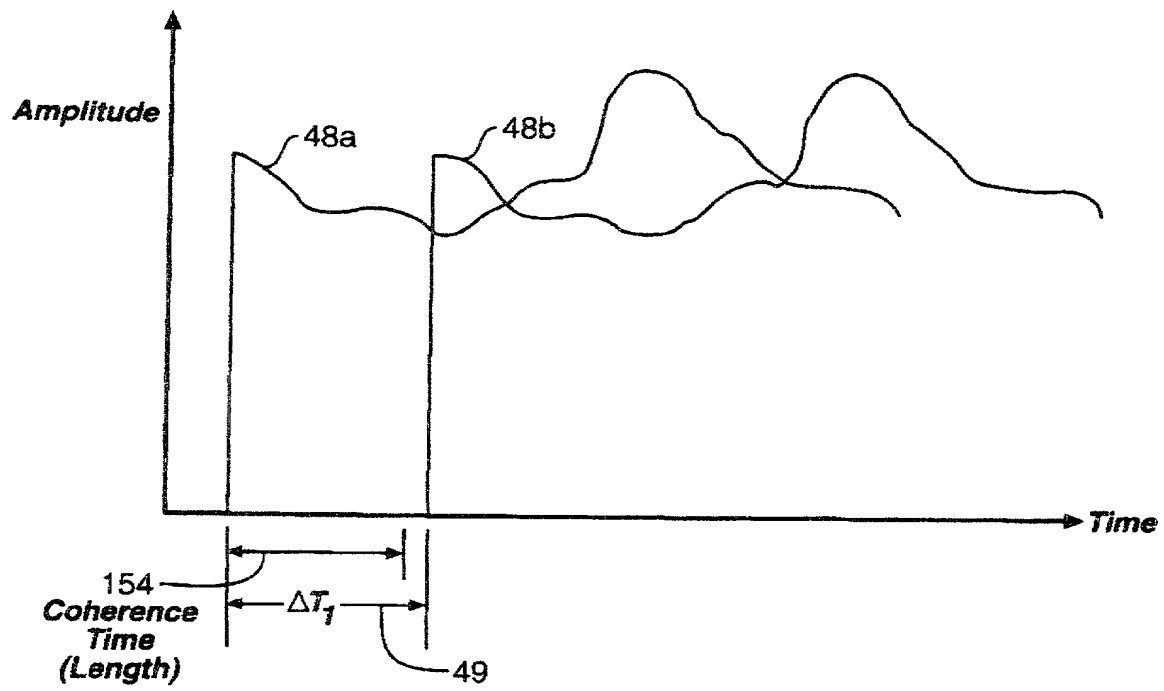


Fig. 18

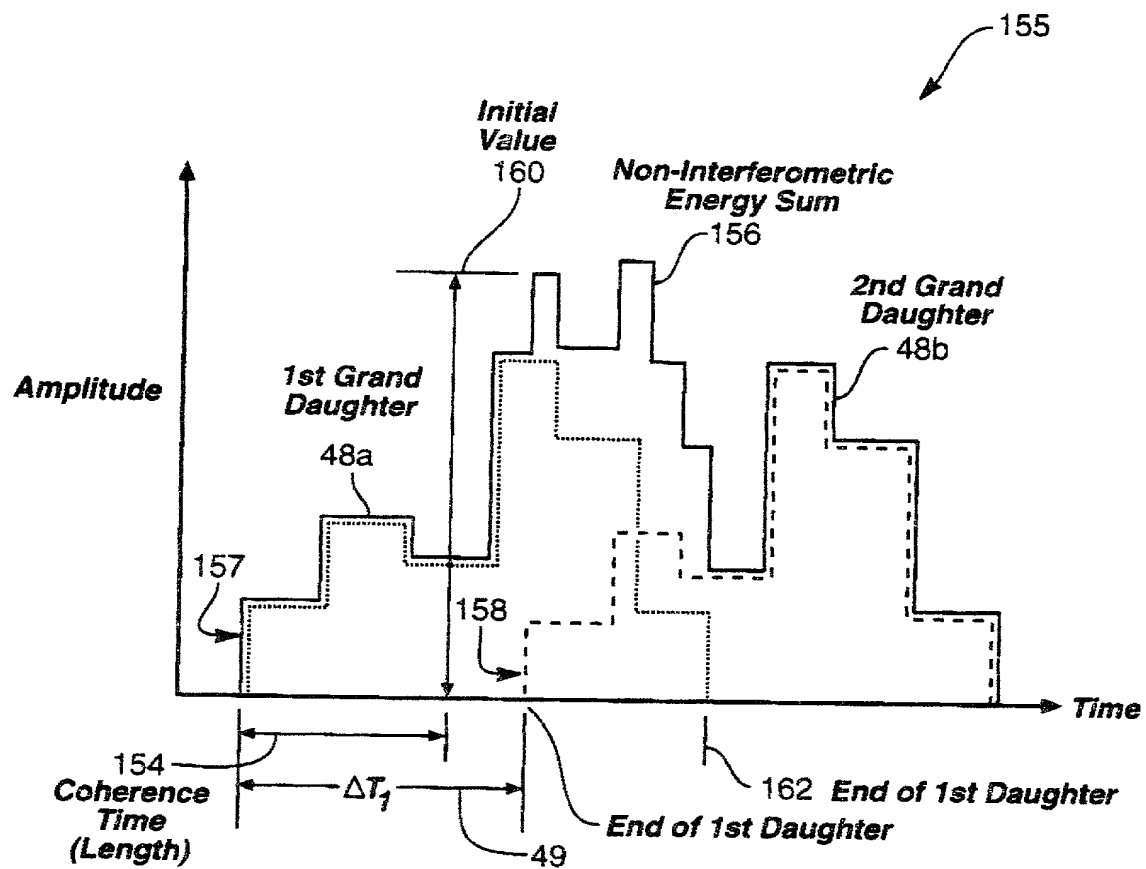


Fig. 19

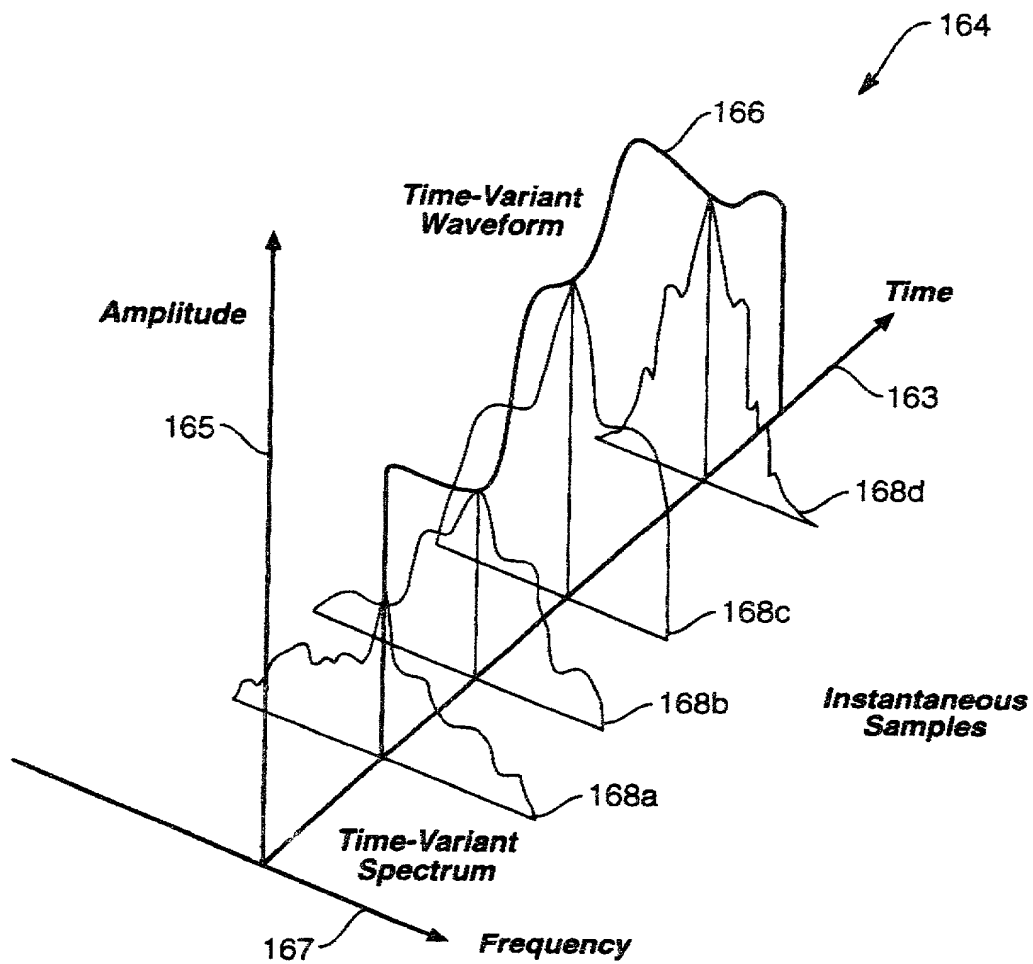


Fig. 20

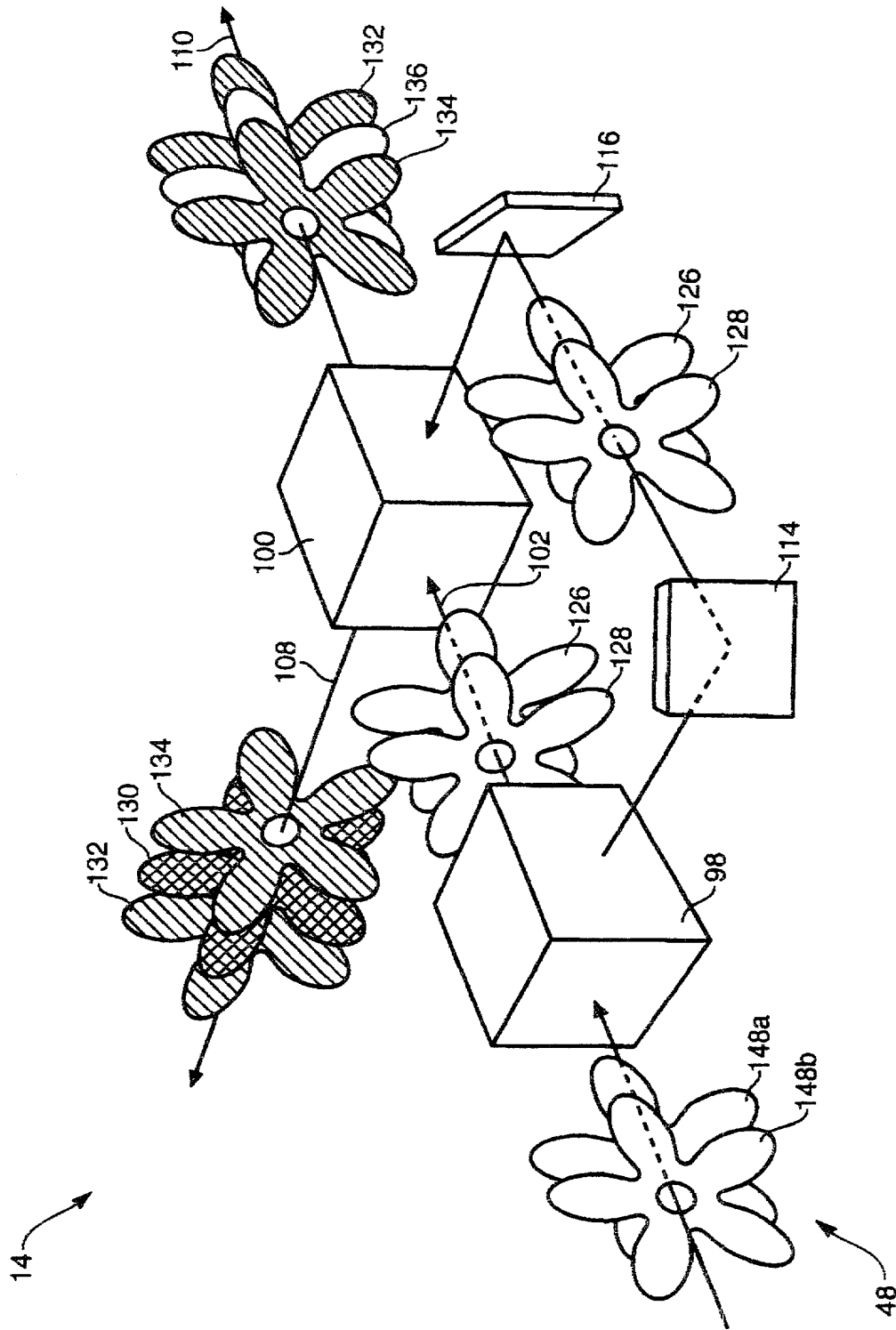
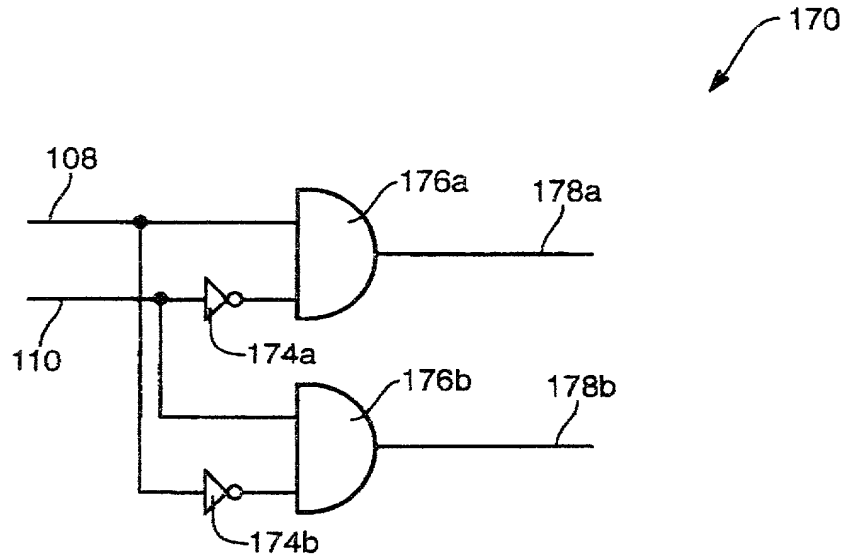
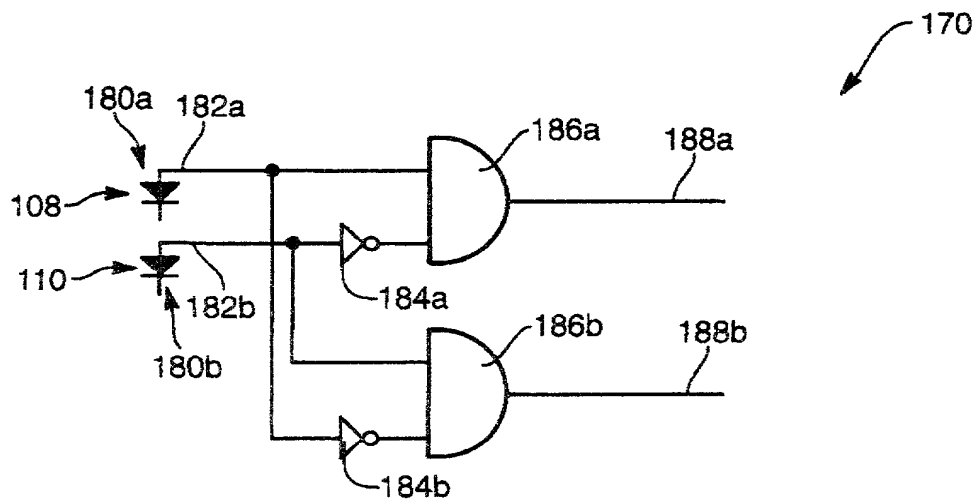


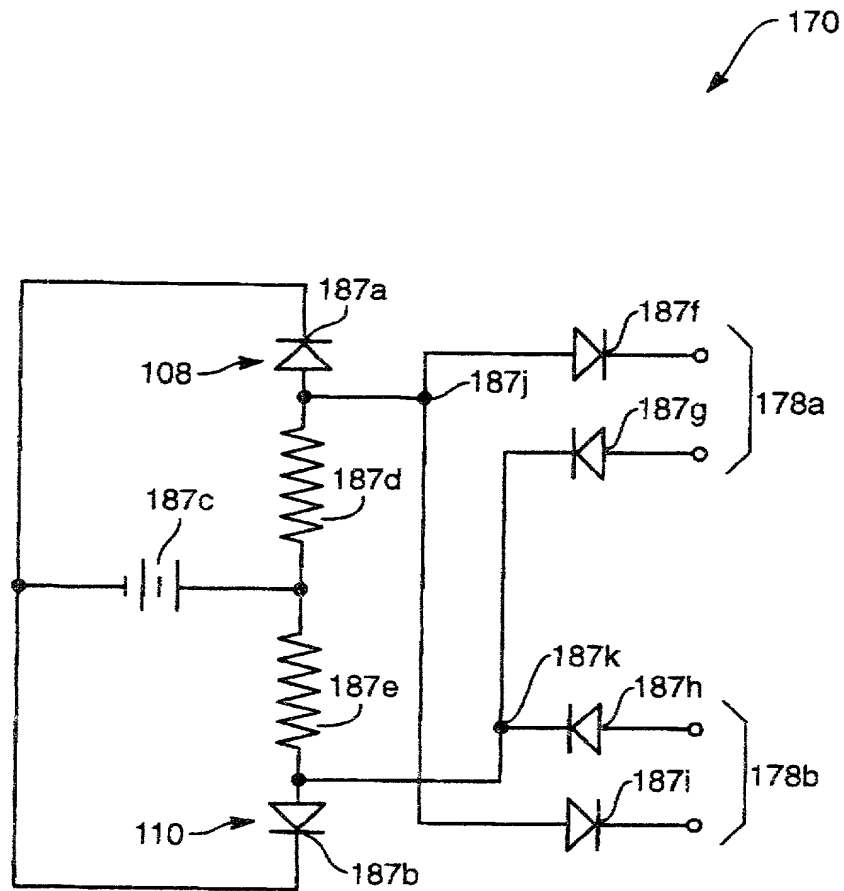
Fig. 21



Photonic Processor
Fig. 22

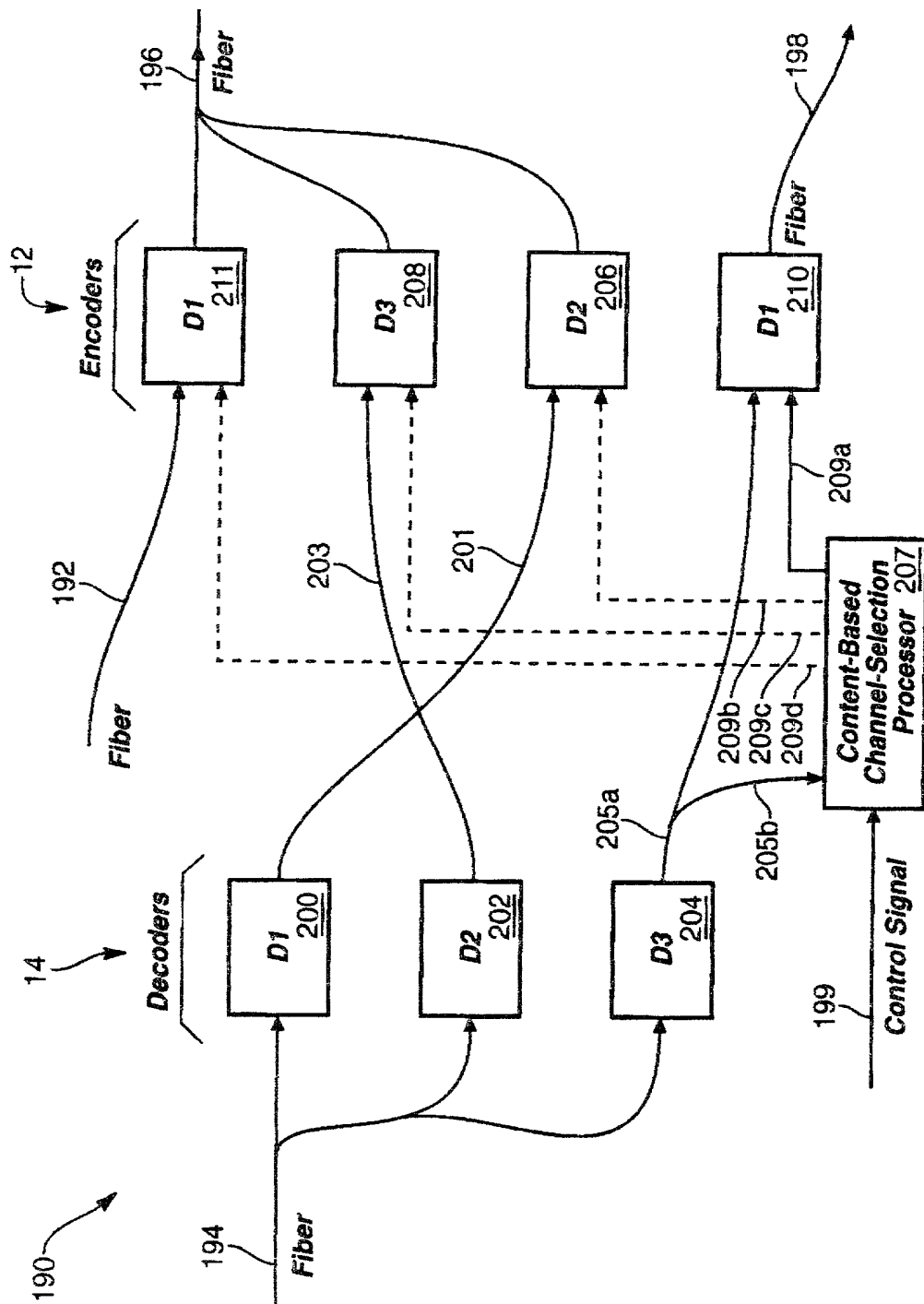


Electronic Processor
Fig. 23A



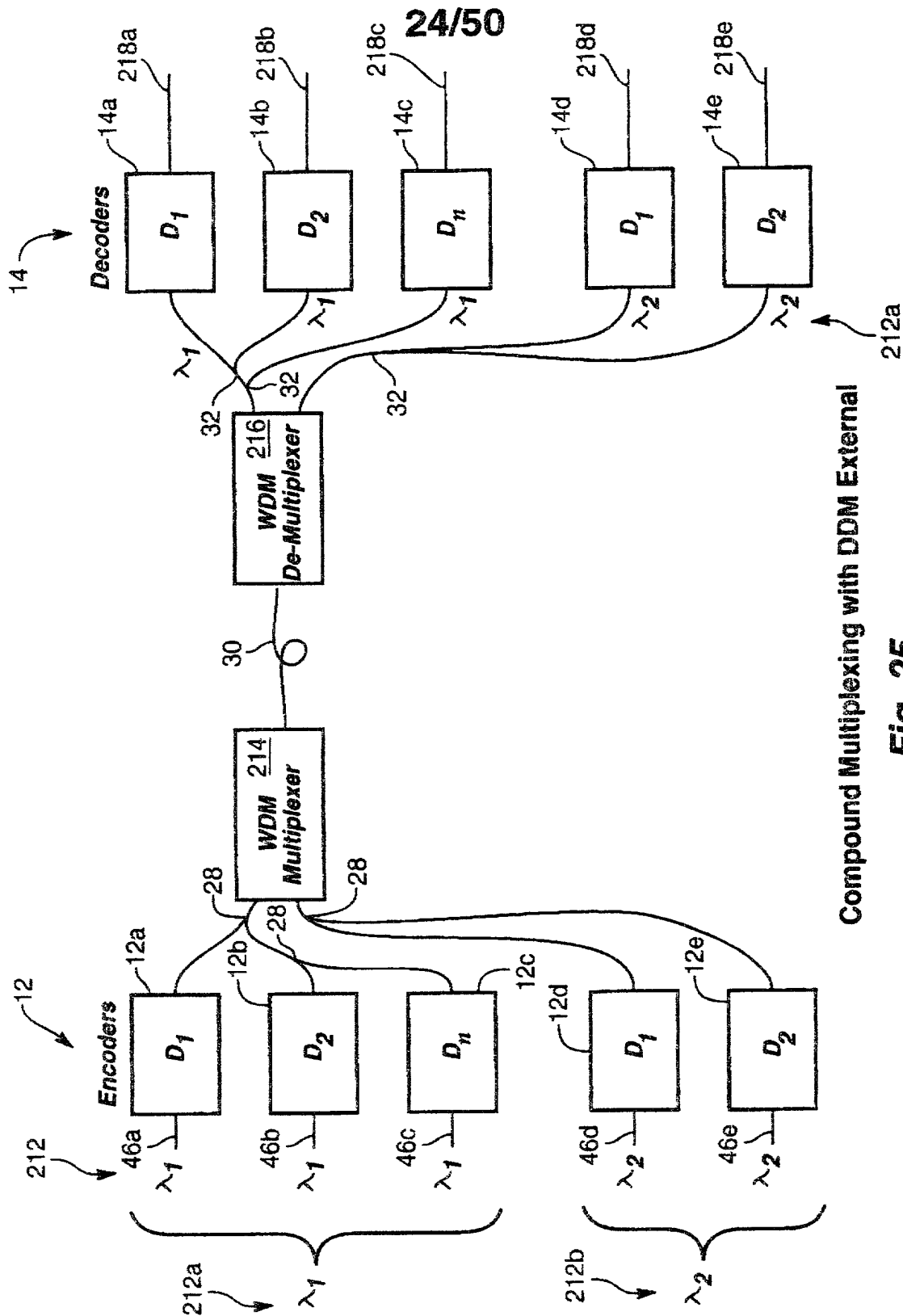
Electronic Processor

Fig. 23B



Drop/Rearrange/Add Unbuilding/Rebuilding

Fig. 24



Compound Multiplexing with DDM External

Fig. 25

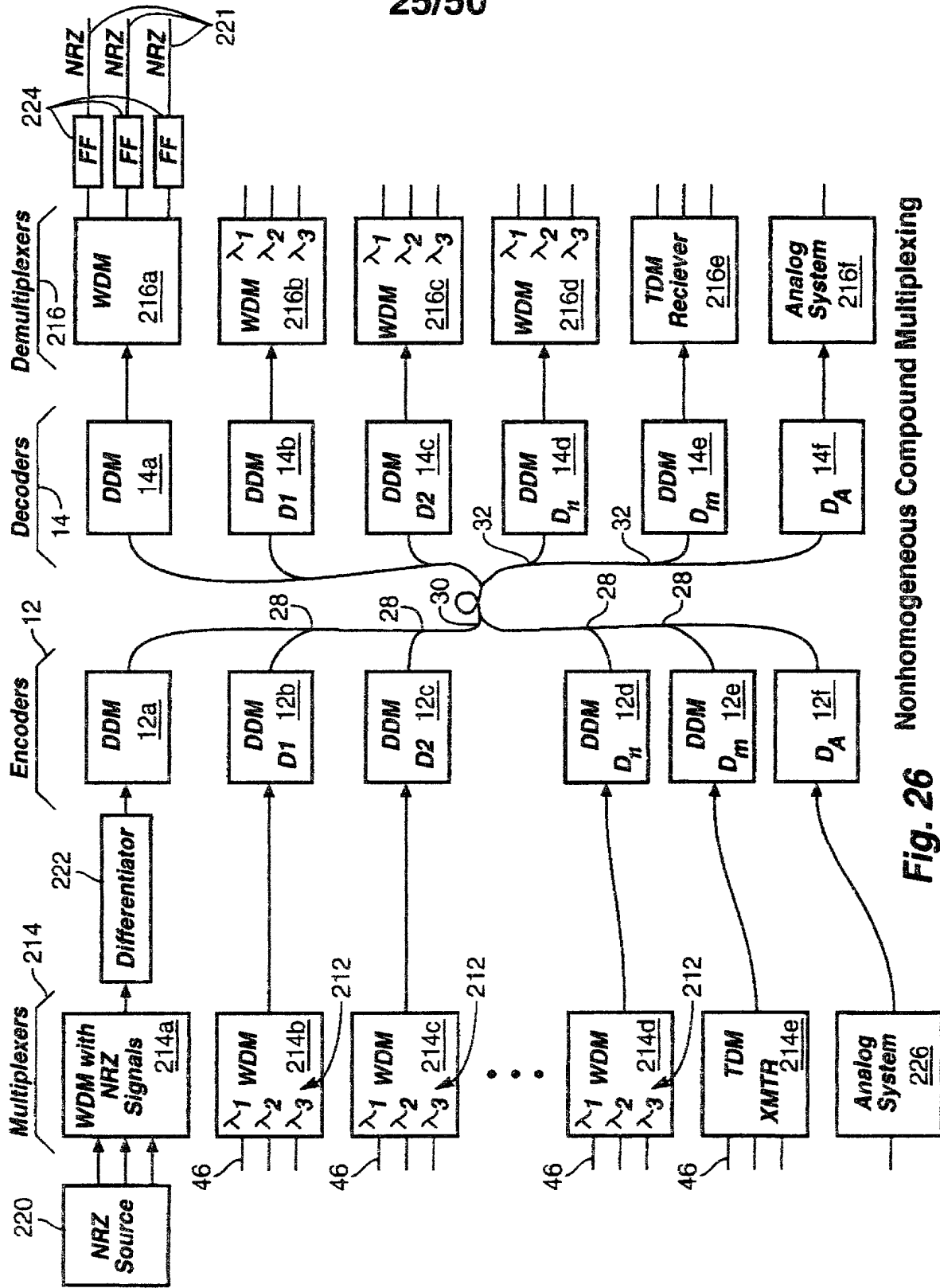
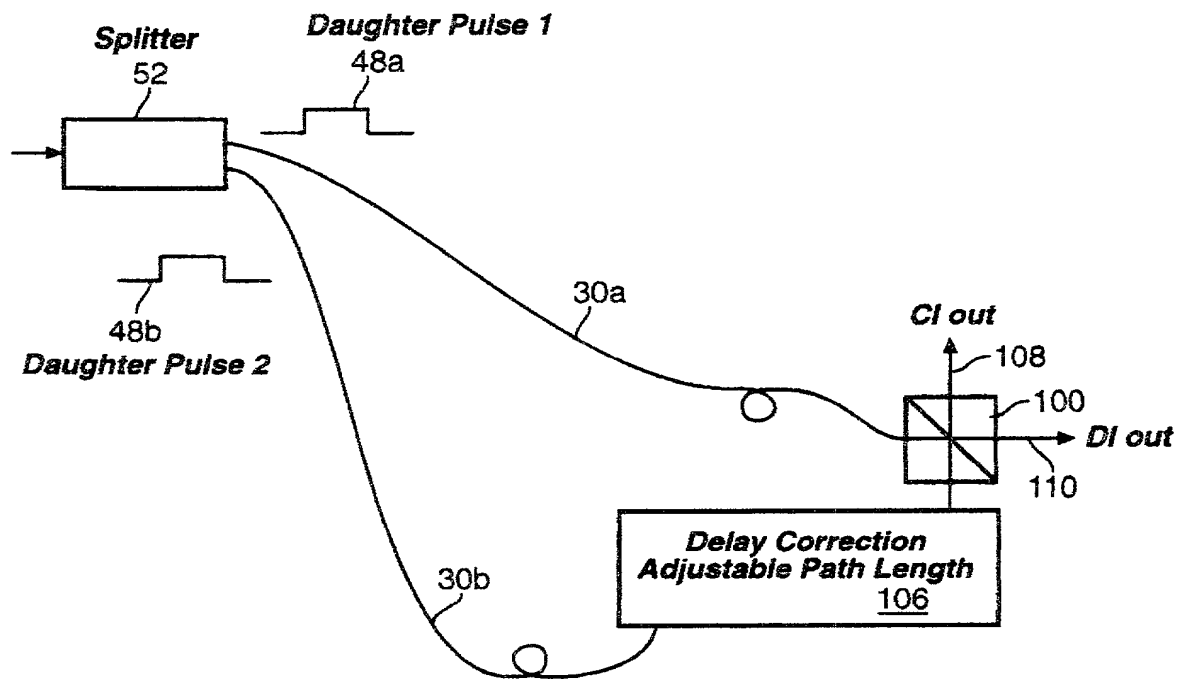


Fig. 26 Nonhomogeneous Compound Multiplexing



Multiple Delay Path

**Integrated Delay and
Delay Correction**

FIG. 27

Photonic NRZ Interface

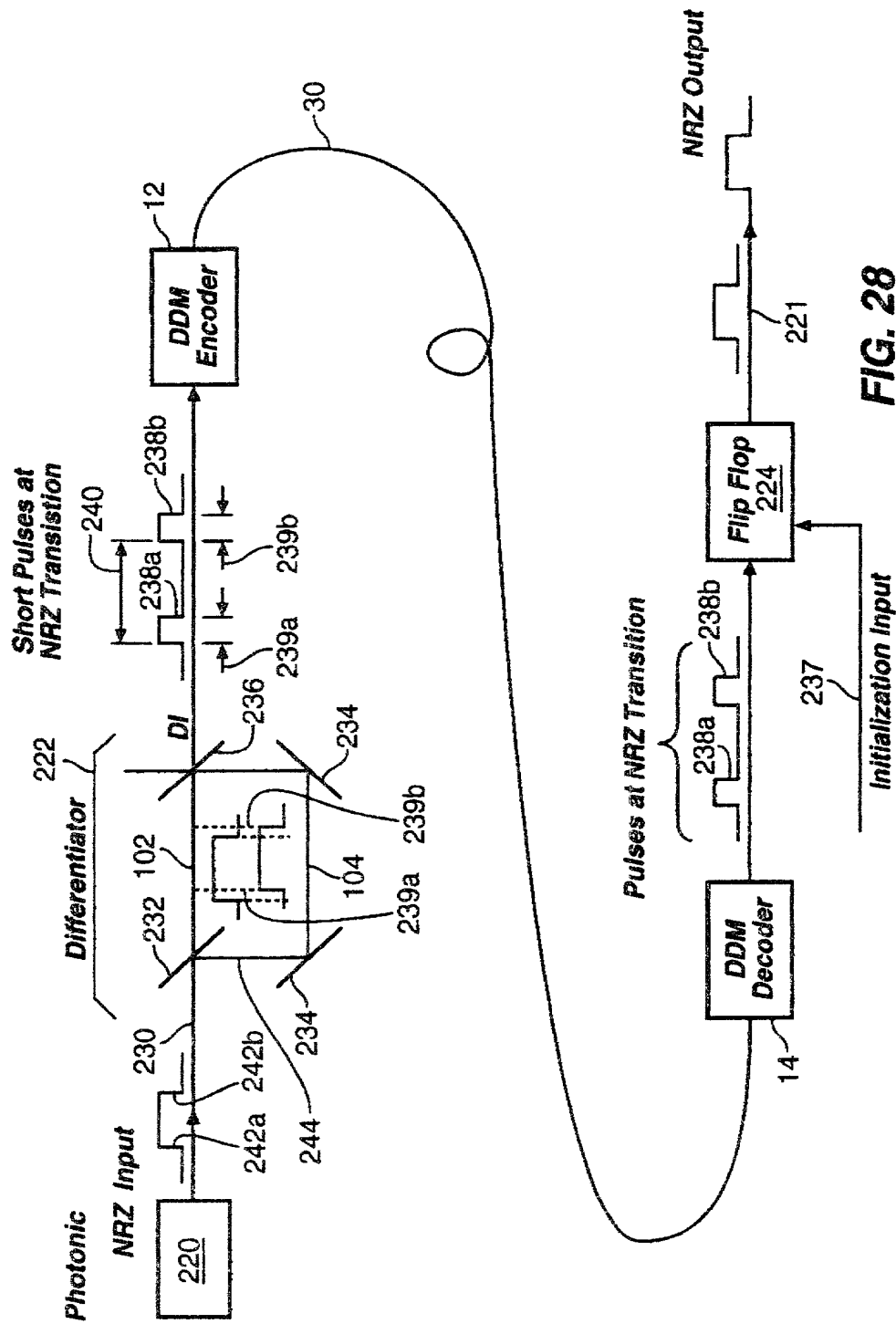


FIG. 28

28/50

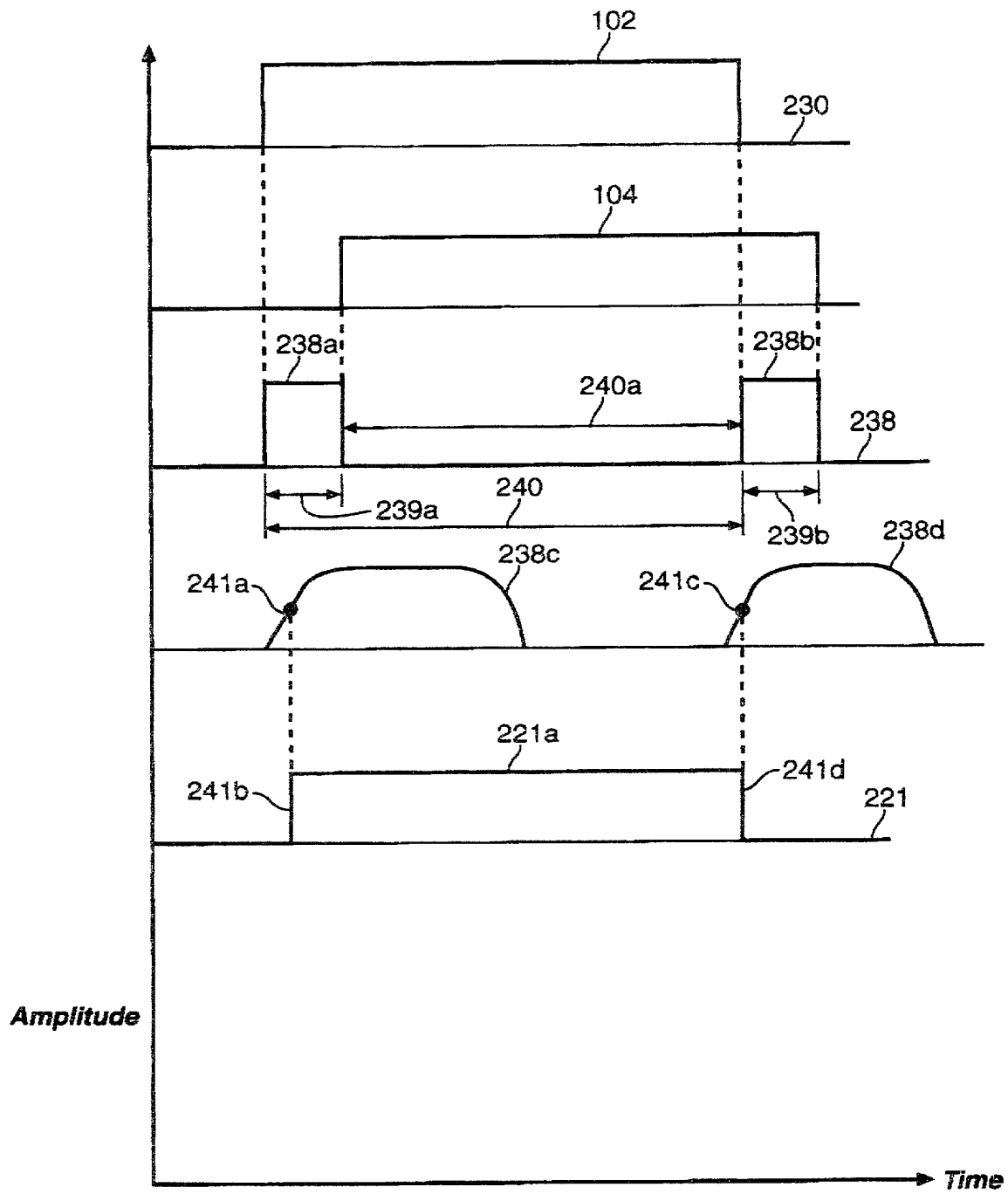
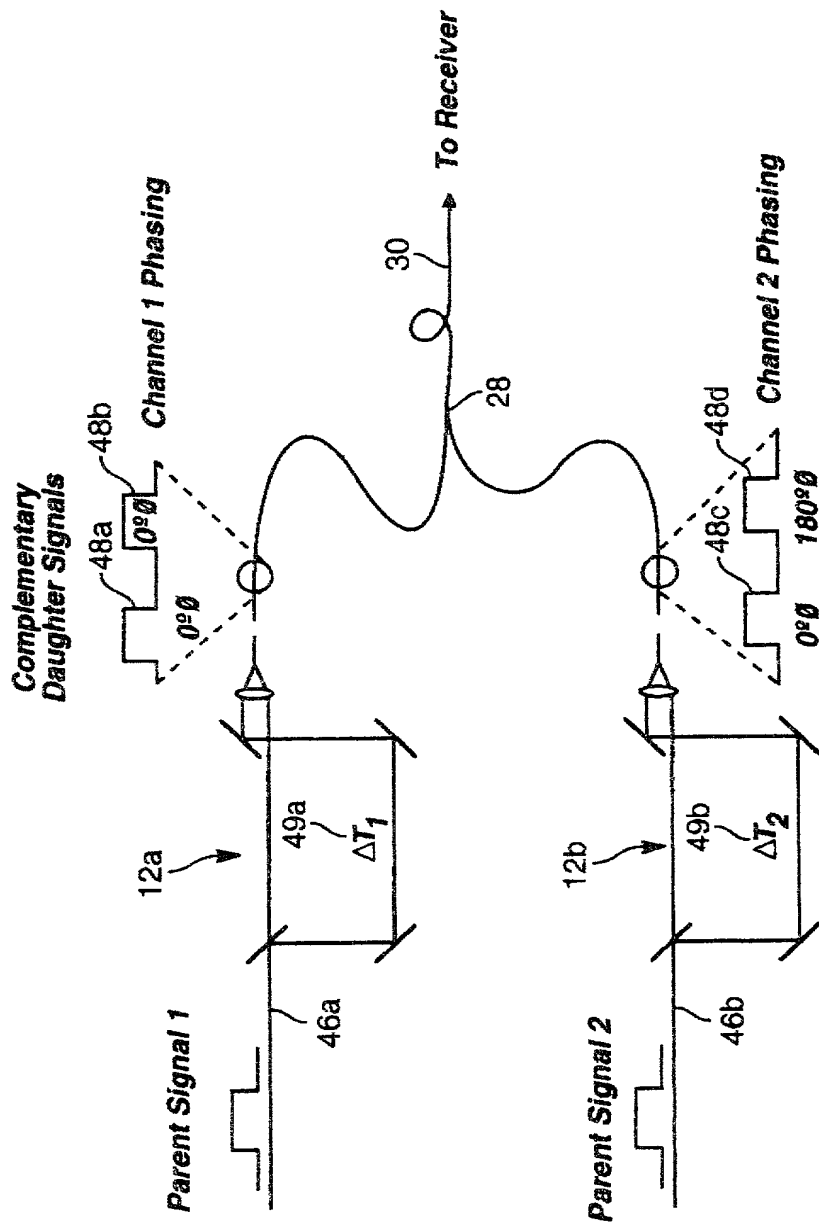


FIG. 29



Phase Sequenced Dual Channel Encoder

FIG. 30

Phase Sequence Timing

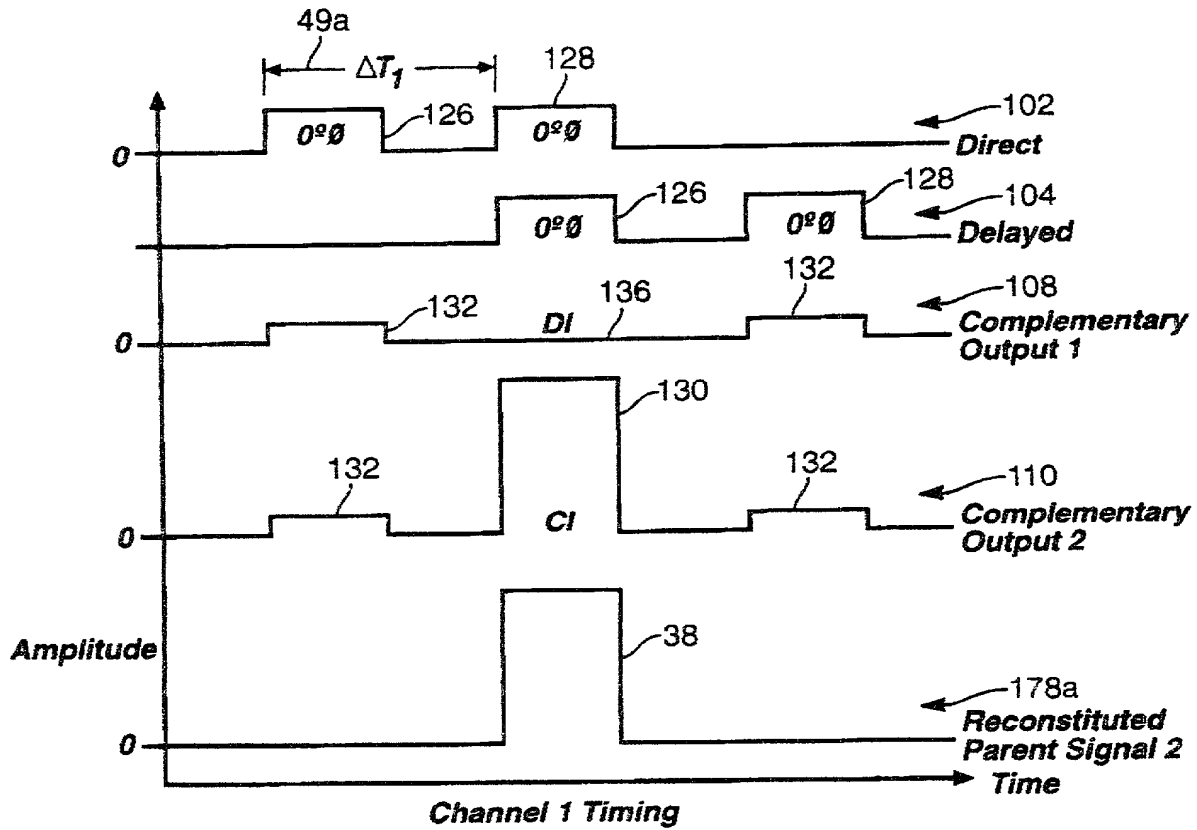


FIG. 32

Phase Sequence Timing

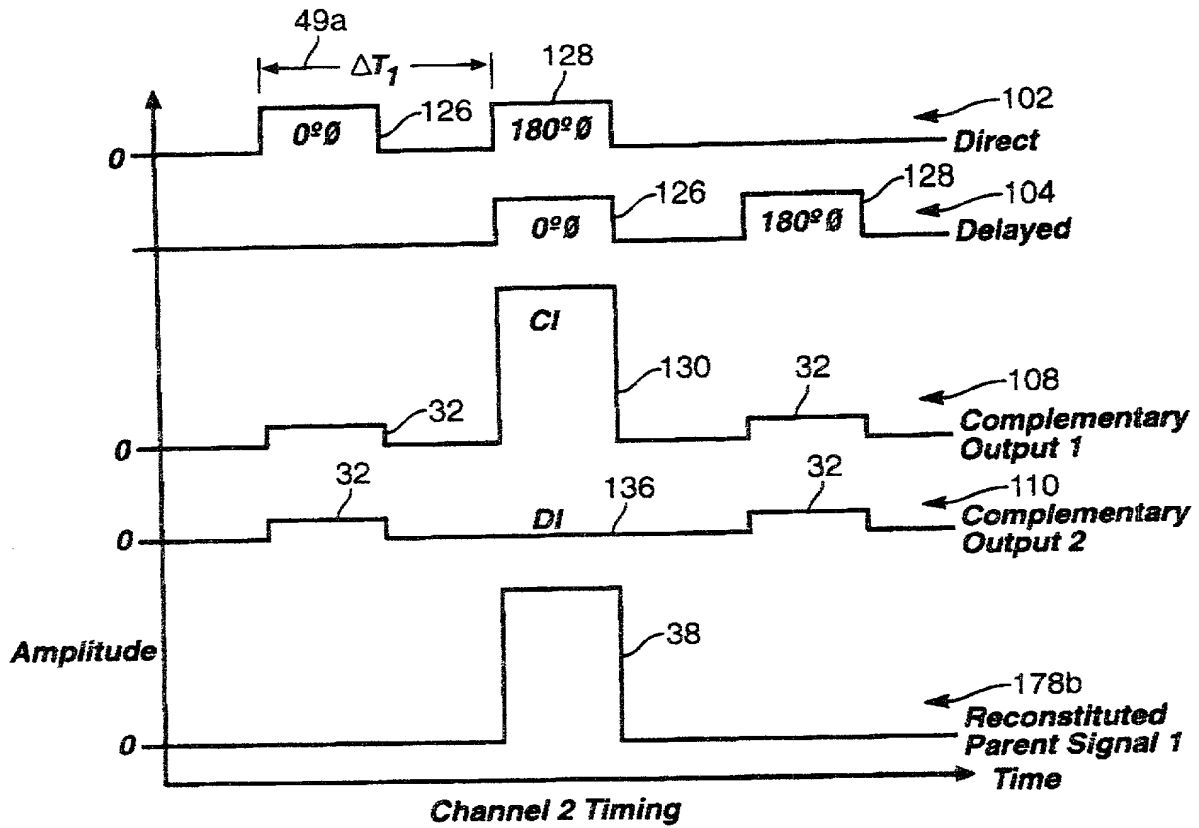


FIG. 33

Quadrature Encoding/Decoding Apparatus

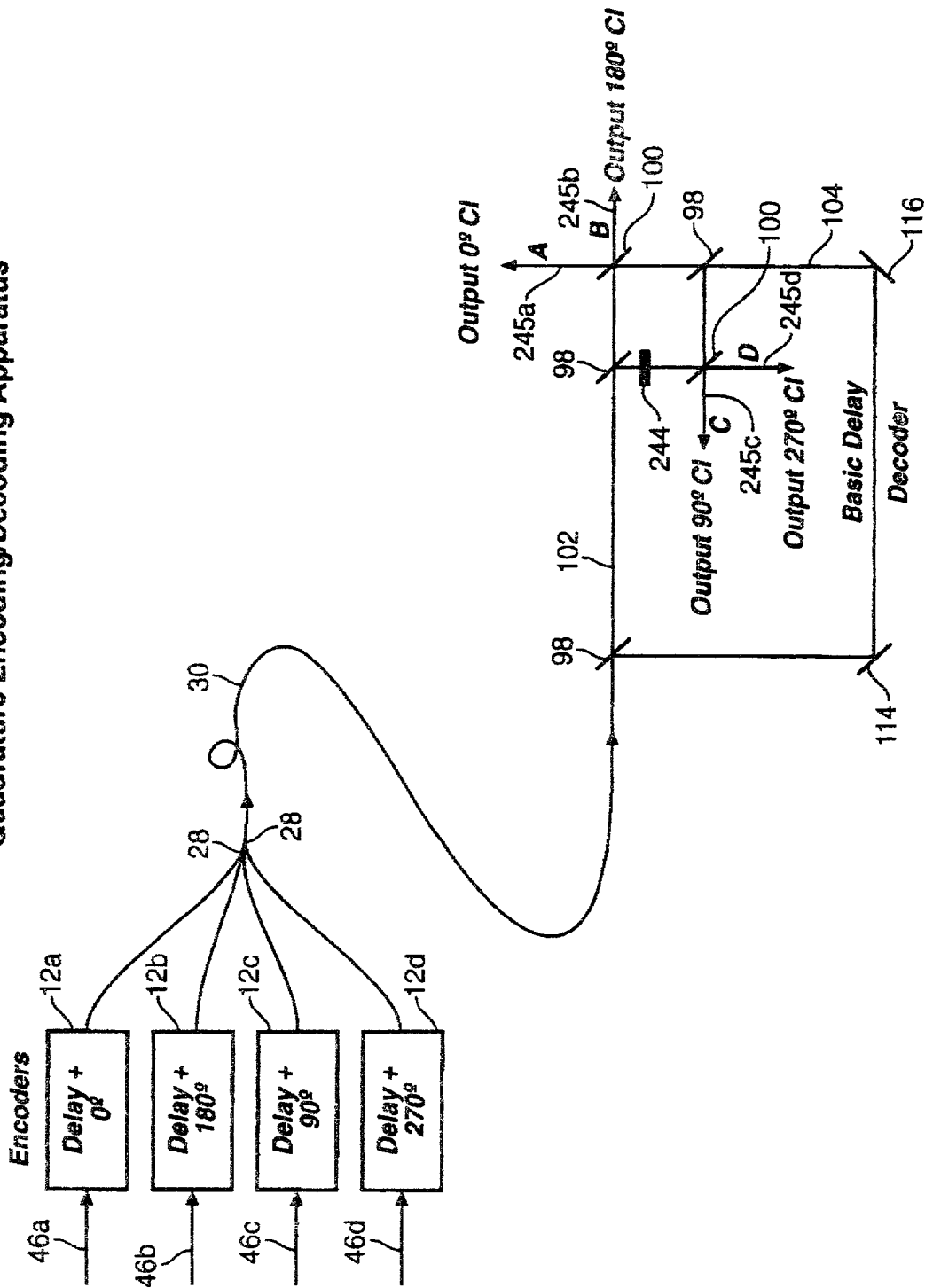


FIG. 34

		<i>Phase of Direct Signal</i>	<i>Phase of Delayed Signal</i>	<i>Quadrature Outputs</i>			
				<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
46a	<i>Channel 1</i>	0	0	<i>CI</i>	<i>DI</i>	<i>C = D</i>	
46b	<i>Channel 2</i>	0	180	<i>DI</i>	<i>CI</i>	<i>C = D</i>	
46c	<i>Channel 3</i>	0	90	<i>A = B</i>		<i>CI</i>	<i>DI</i>
46d	<i>Channel 4</i>	0	270	<i>A = B</i>		<i>DI</i>	<i>CI</i>

245a 245b 245c 245d

FIG. 35

Quadrature Wave Forms For One Channel

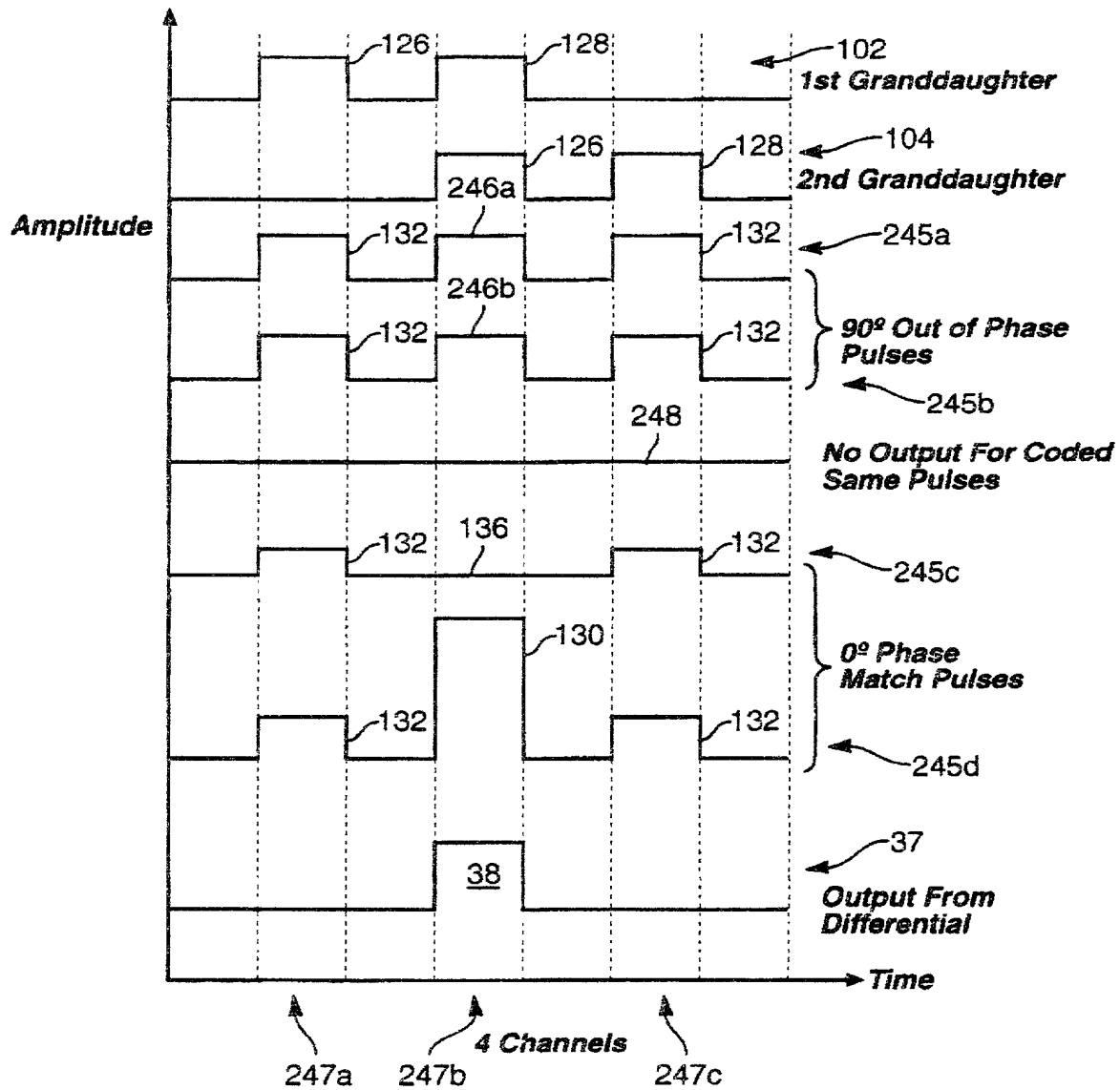


FIG. 36

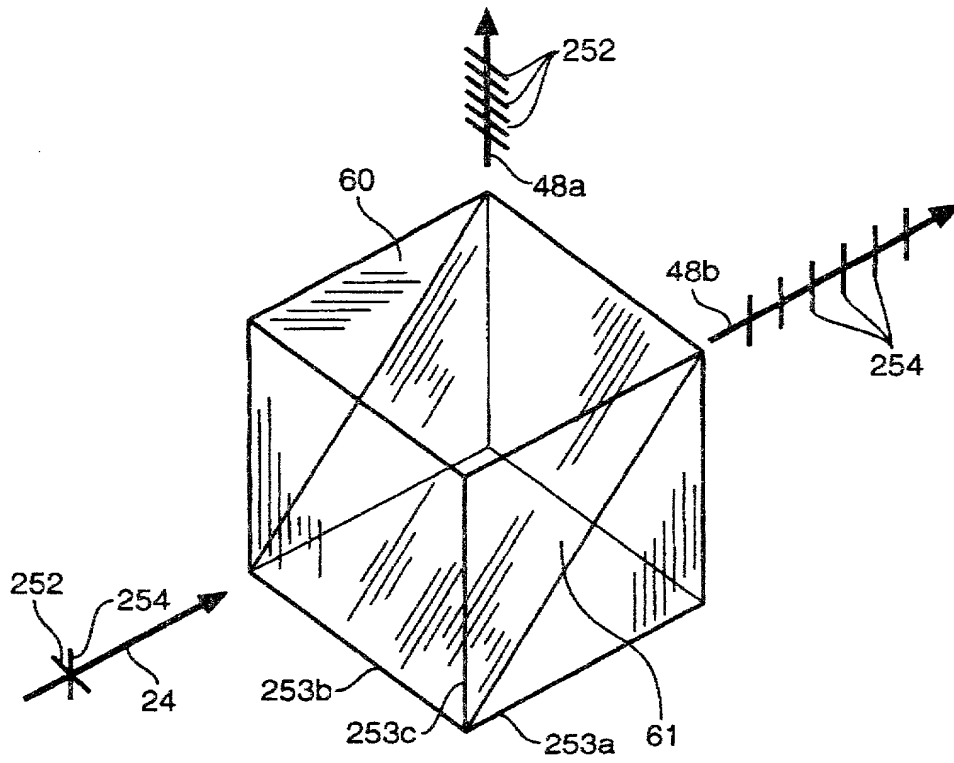


FIG. 37A

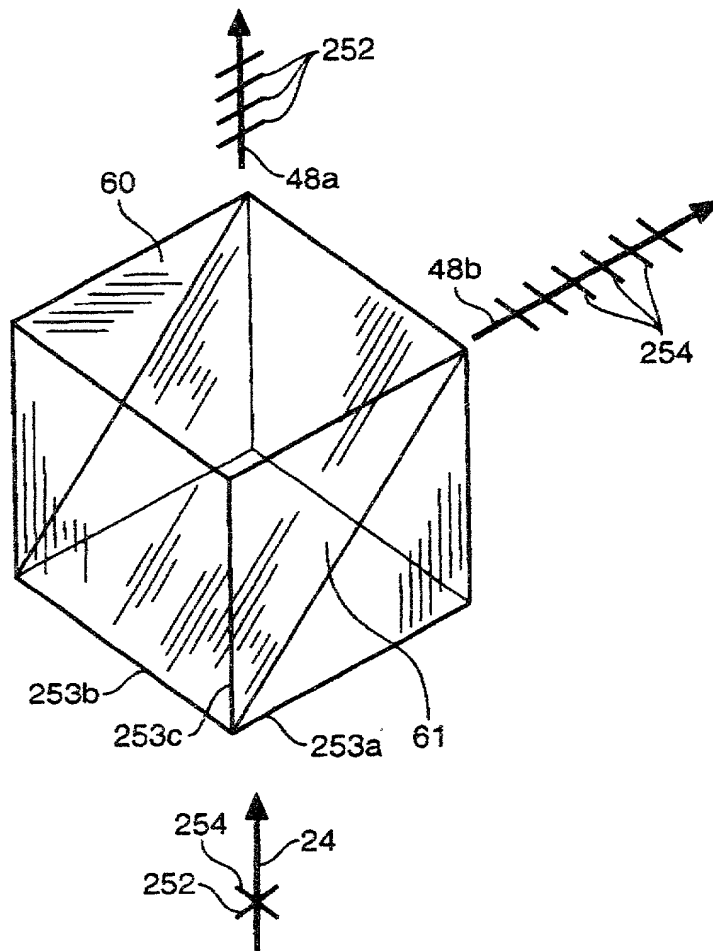
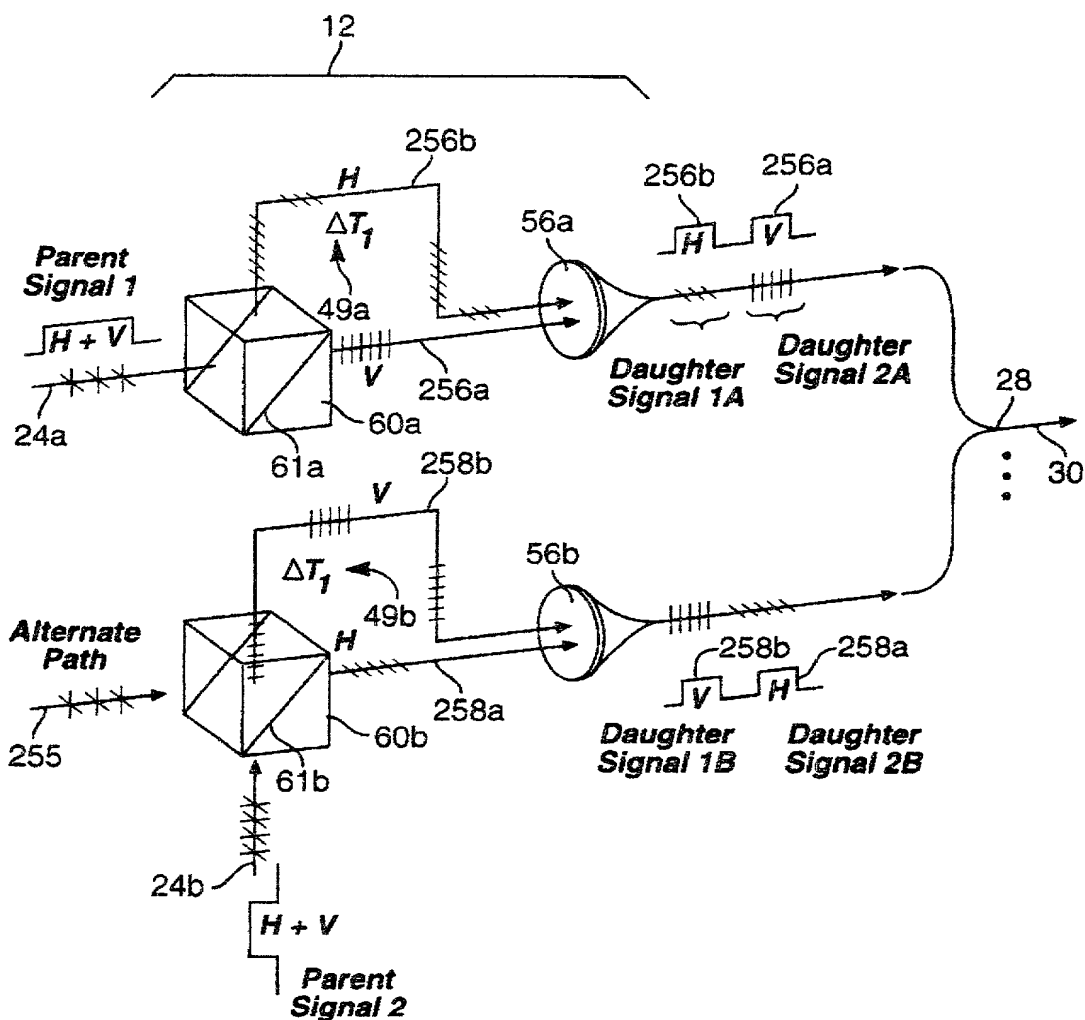


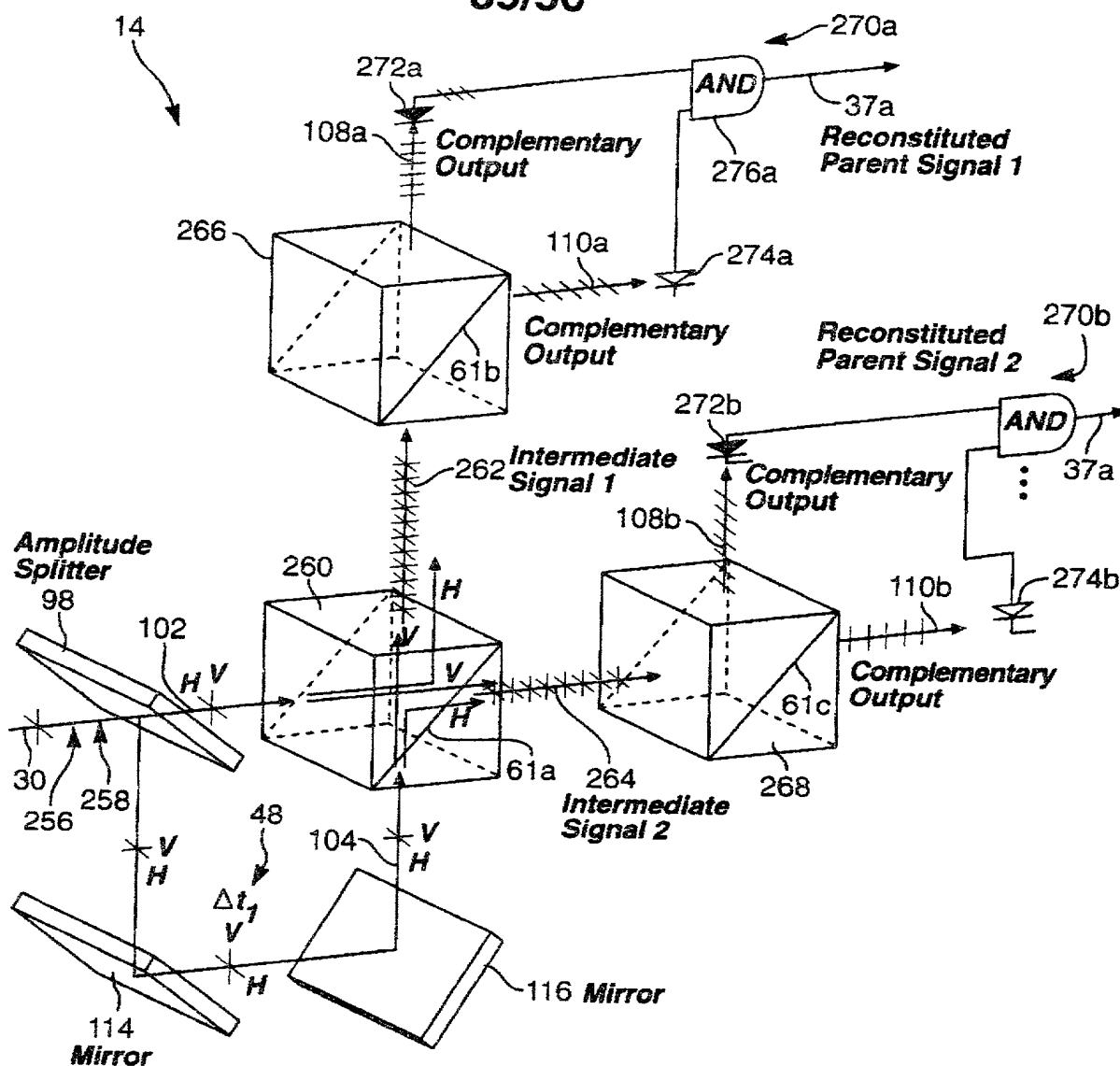
FIG. 37B



Double Encoder With Polarizations Sequenced to Differentiate 2 Channels Having the Same Time Delay Between Daughter Signals

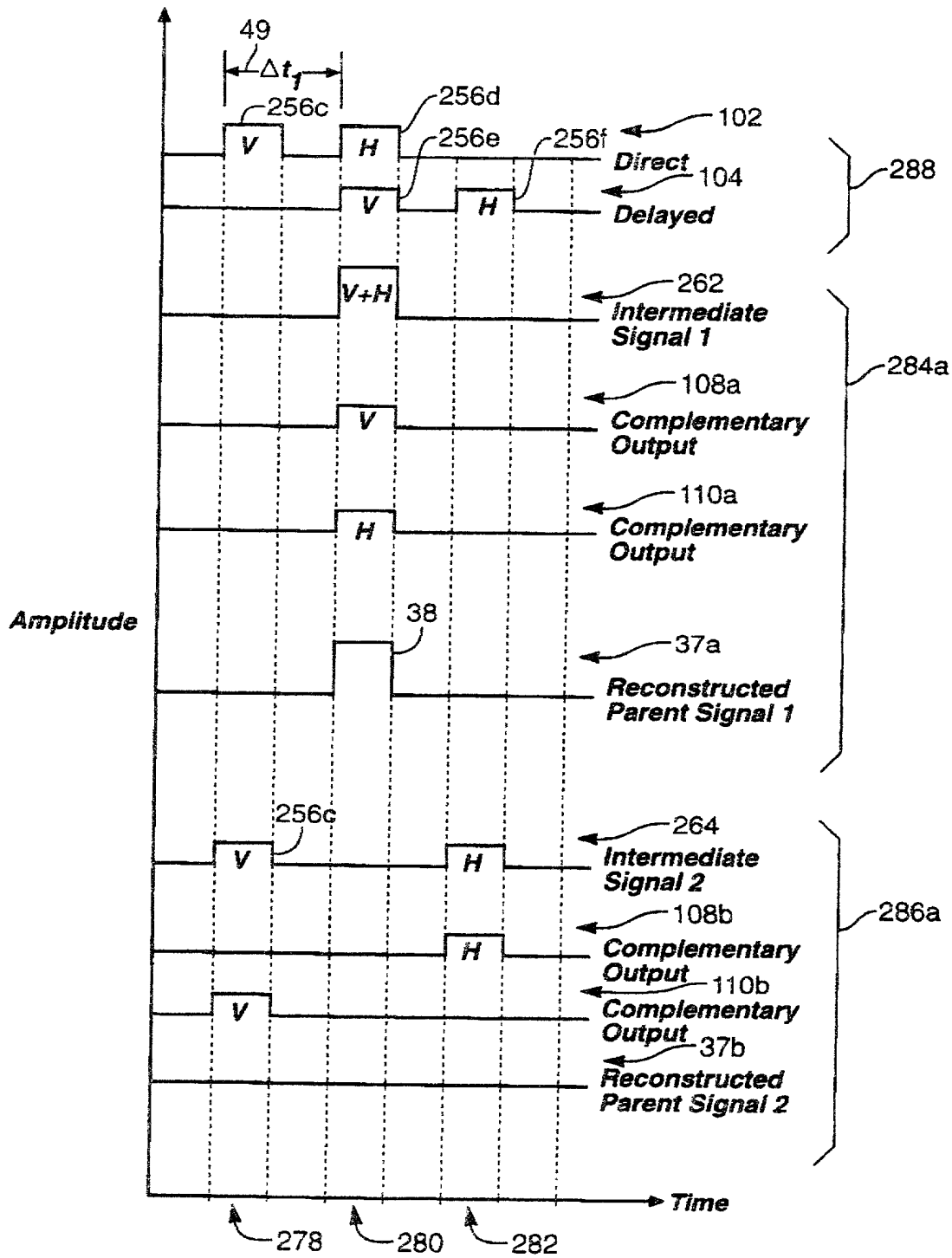
FIG. 38

39/50



Double Decoder With Polarizations Sequenced to Differentiate 2 Channels Having the Same Time Delay Between Daughter Signals

FIG. 39



Polarization Sequenced Channel 1 Timing

FIG. 40

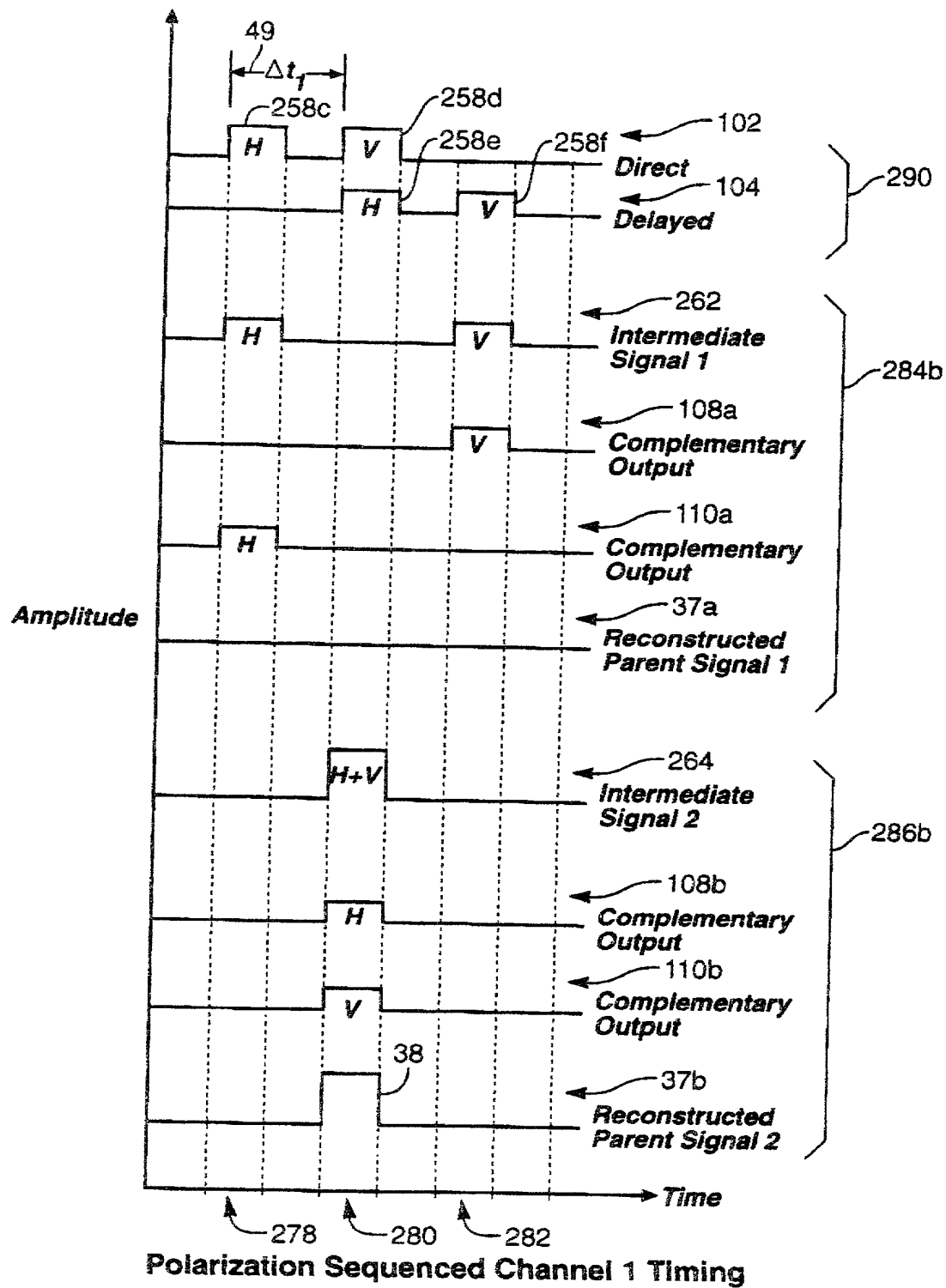


FIG. 41

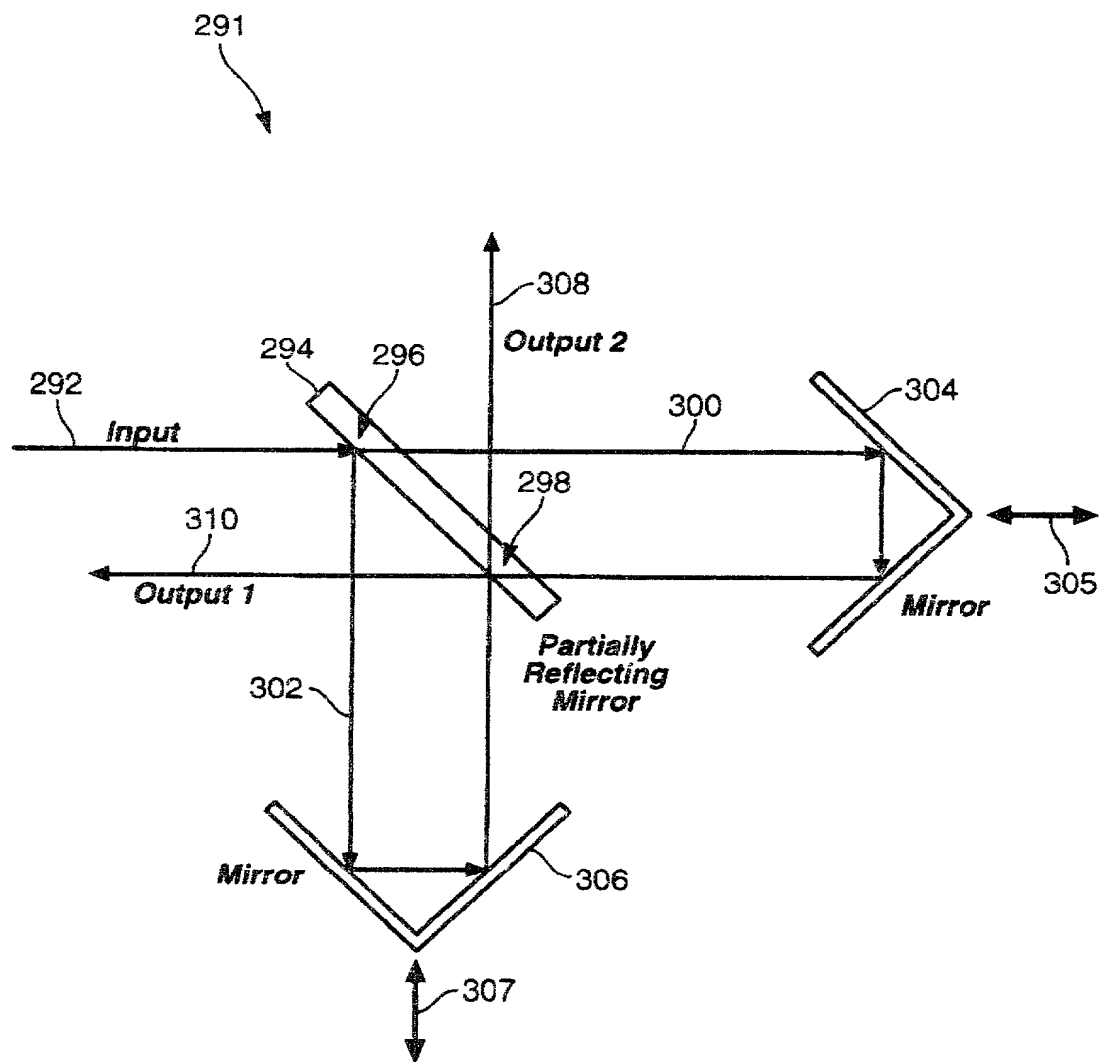


FIG. 42

43/50

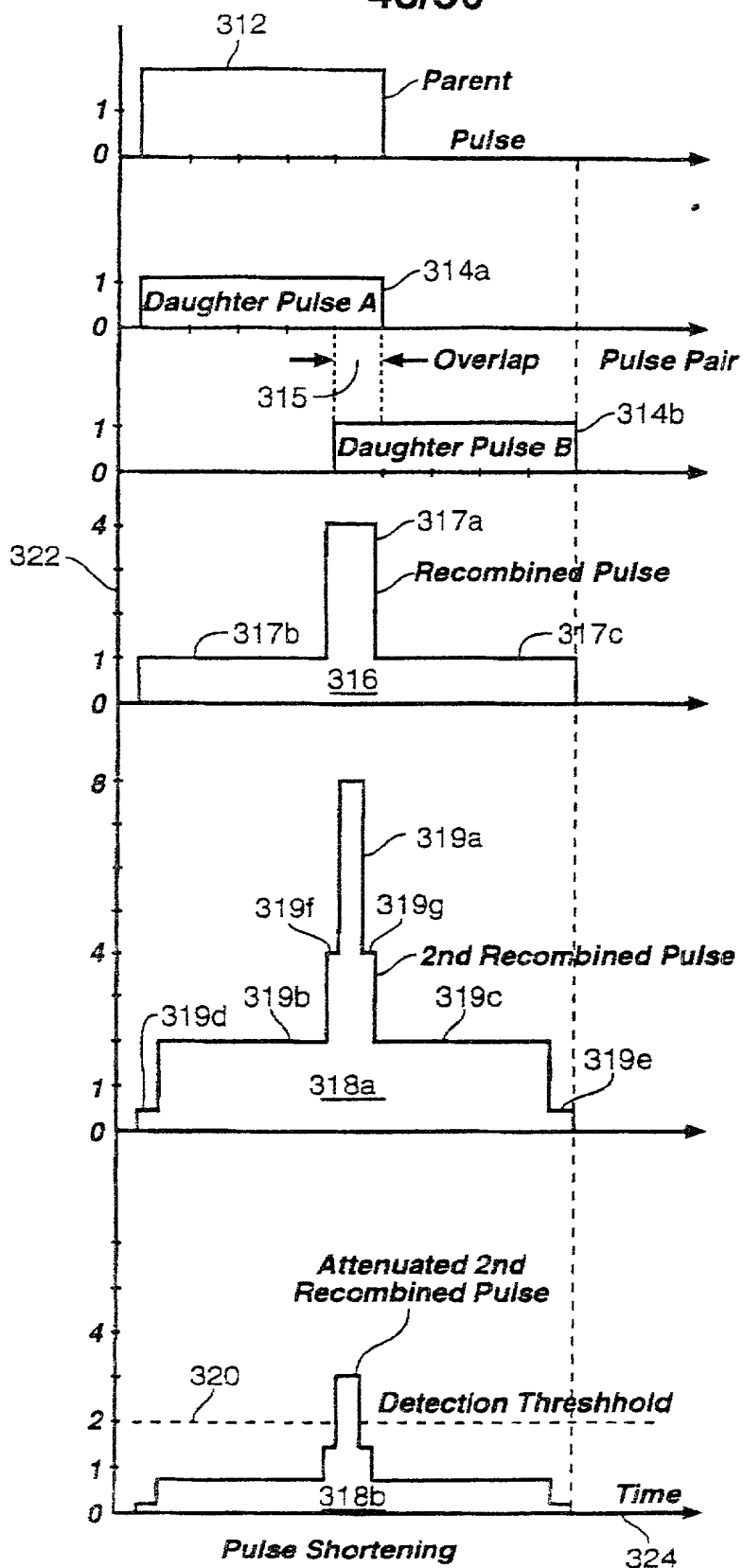


FIG. 43

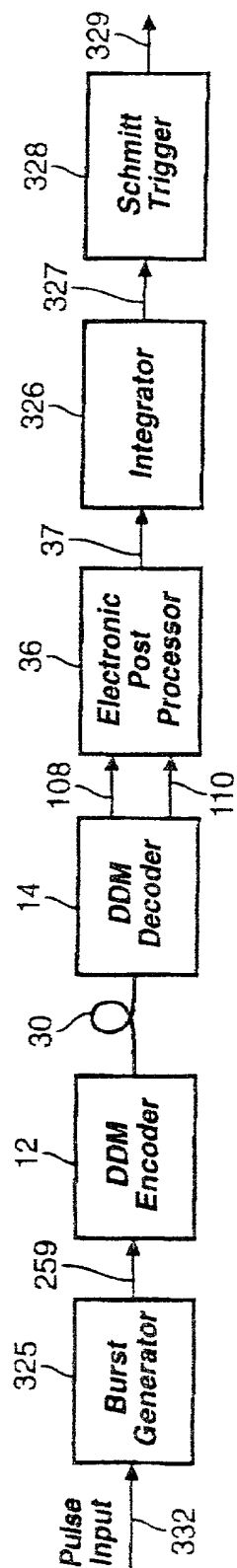


FIG. 44

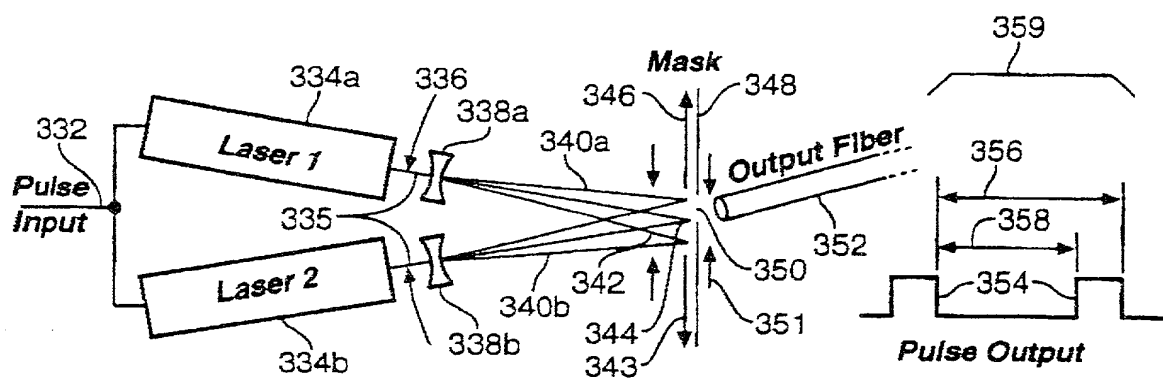
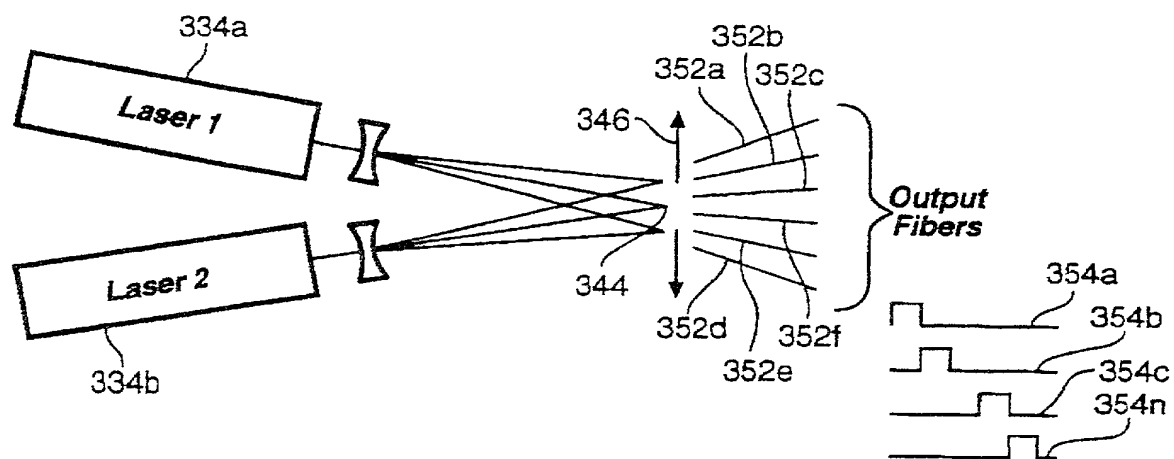


FIG. 45

**FIG. 46**

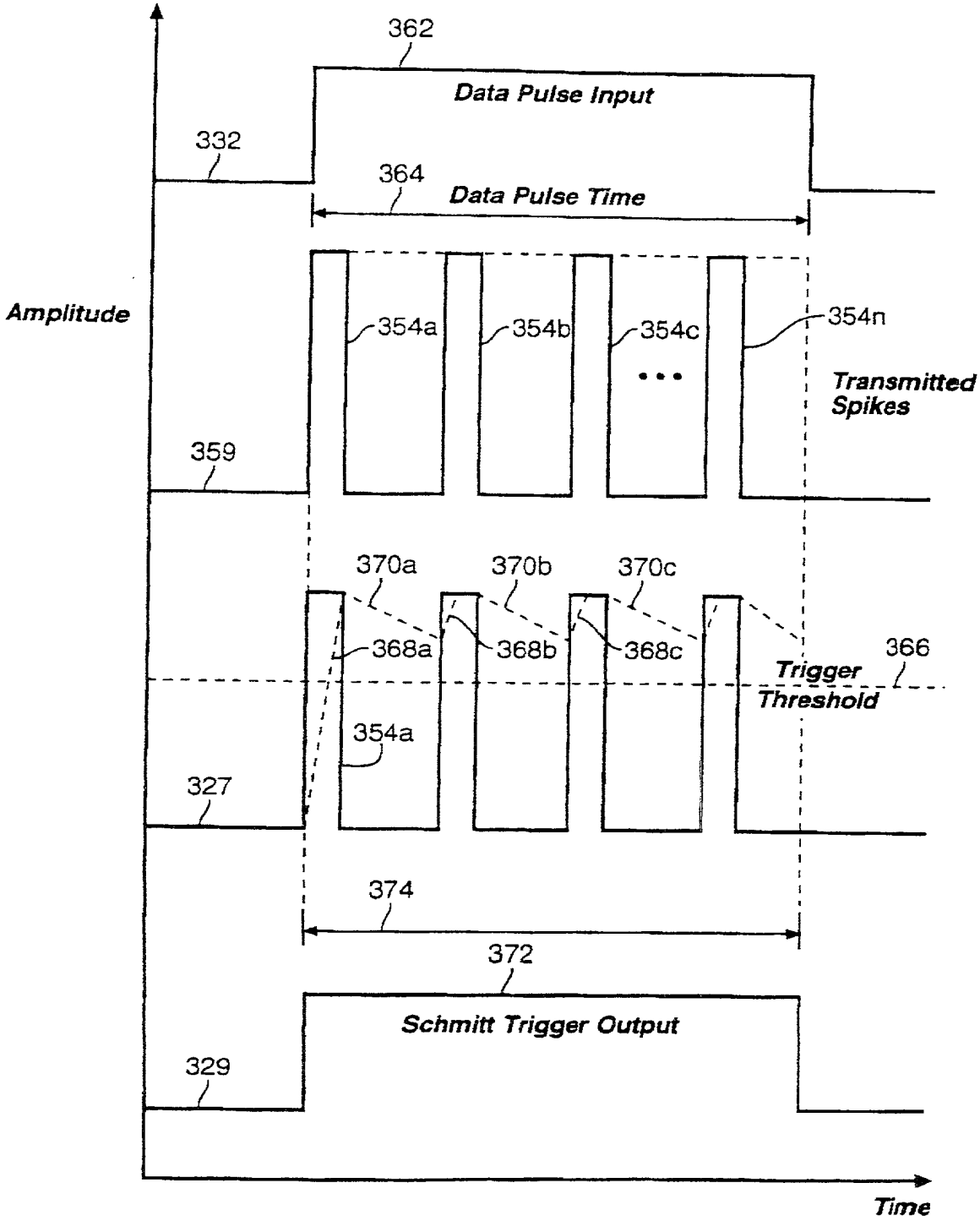


FIG. 47

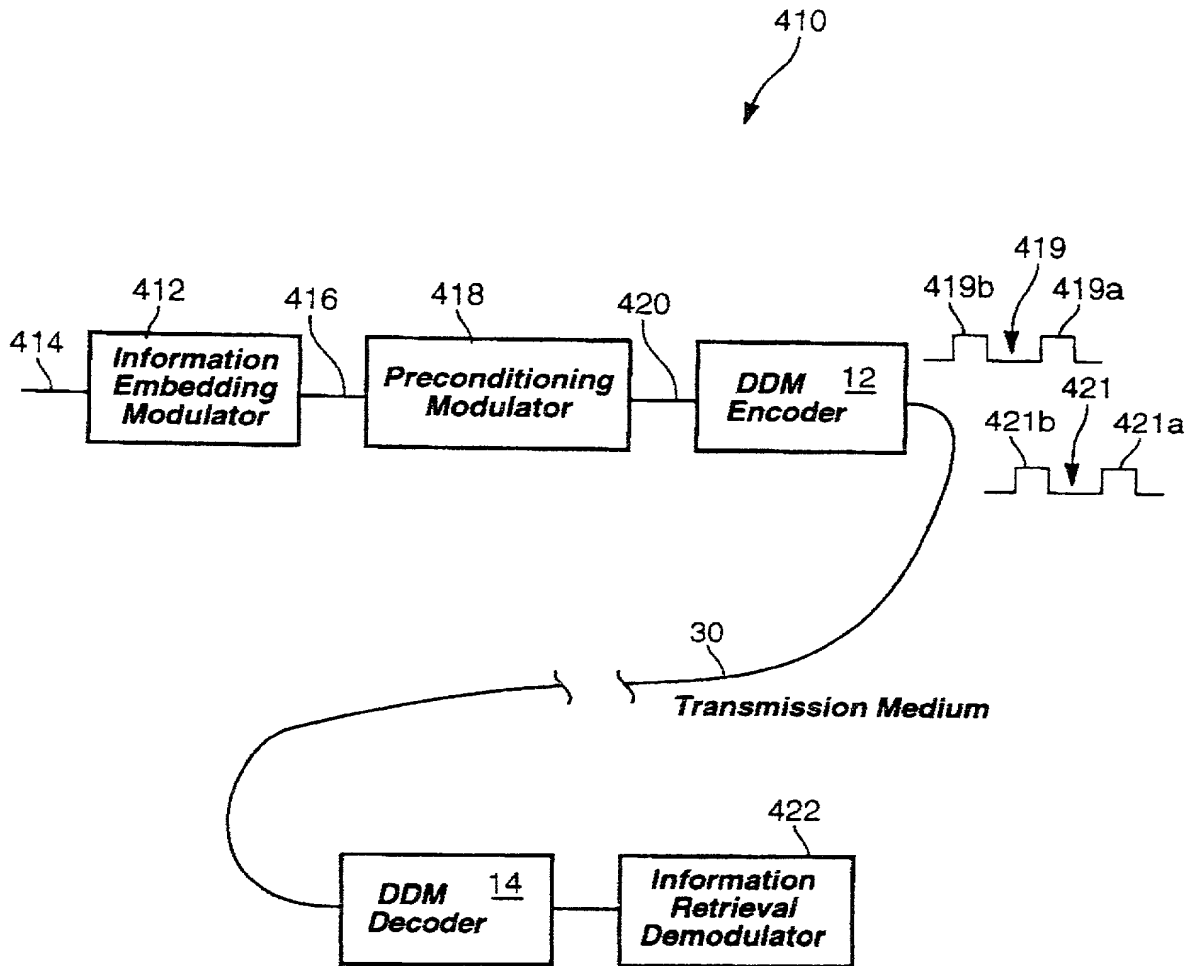


FIG. 48

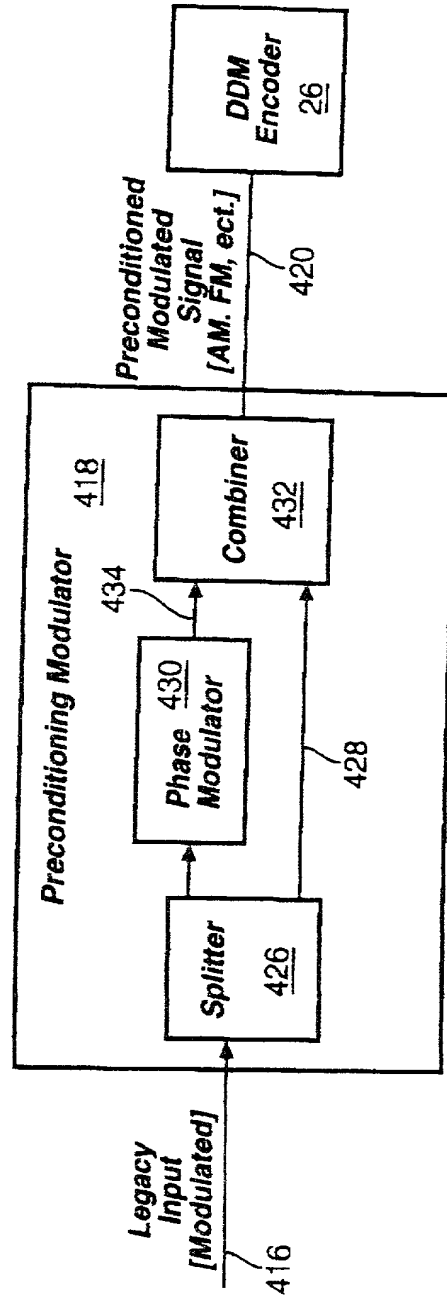


FIG. 49

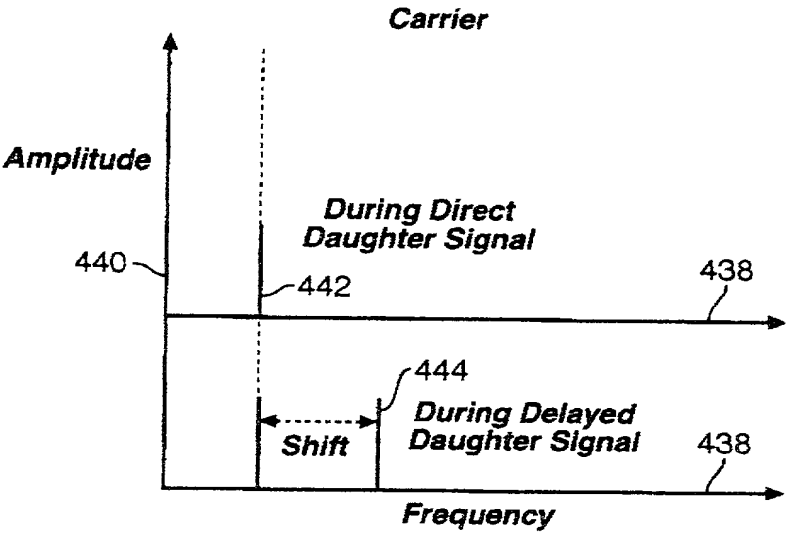


FIG. 50